HEDGE FUND ACTIVISM: IMPACT ON FINANCIAL MARKETS

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Understanding the impact of hedge fund activism and its mechanisms on target firms and the financial markets

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To My Parents

ABSTRACT

This thesis is an attempt to contribute towards the ongoing debate about the long-term impact of hedge fund activism. Hedge fund activism has been on a rampage in recent times, with activists turning up the heat in their quest to improve corporate governance. While existing studies have examined the ability of hedge fund activists to create value, most of these studies analyse the stock market reaction to activist engagements. Furthermore, few studies have examined the long-term impact of hedge fund activism. Even fewer studies have compared the ability of hedge fund activists to create value to the ability of other shareholder activists such as mutual funds and pension funds. Using a comprehensive hand-collected database of activist campaigns from 1994 to 2016, this thesis aims to contribute to the existing literature on hedge fund activism by analysing the long-term impact of hedge fund activism as well as by testing the efficiency of hedge fund activists compared to other shareholder activists. The findings of this thesis suggest that while there was limited evidence of a positive long-term impact of hedge fund activist-initiated takeovers, activist hedge funds were more than capable of playing the long-term game by increasing managerial focus through corporate divestitures. Furthermore, there was no evidence of activist hedge funds destroying value of either their target firms or the financial markets by employing derivatives, though they were more effective without employing derivatives. Finally, hedge fund activists are more efficient compared to other shareholder activists in creating long-term value to their target firms. Overall, the findings of this thesis urge other shareholder activists to collaborate with activist hedge funds rather than undertaking their own activist engagements, which has now been found out to be value destroying. It also urges policymakers to evaluate their goals, while seeking to regulate activist hedge funds.

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DECLARATION

The content of this doctoral dissertation is based on the research work completed at Durham University Business School, UK. No material contained in the thesis has previously been submitted for a degree in this or any other university.

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CHAPTER 1 – INTRODUCTION

1.1.Shareholder Activism At Present

Alchian and Demsetz (1972) developed a broad theory of corporate governance, according to which, a combination of scale economies, individual wealth constraints, and risk aversion enabled the corporate form of organization efficient for some production processes, but "… modifications in the relationship among corporate inputs are required to cope with the shirking problem that arises with profit sharing among large numbers of corporate shareholders." Two of such "modifications" proposed by Alchian and Demsetz (1972), proxy battles and shareholder intervention, together makes up the major branch of current corporate governance research known as shareholder activism (Denes,Karpoff and McWilliams, 2017).

"*The 'activist' business model is designed to take from those that work hard to build long-term value creating enterprises… The "activist" has no responsibility or accountability for what they say or do as they attack our public companies. This timely legislation (i.e. S.1744 Brokaw Act) attacks the tools that enable the activist*." June 2018 Endorsement by Henry C. Newell, Former CEO of Wausau Paper, for Brokaw Act of Senator Tammy Baldwin

One particular area of shareholder activism that has received widespread attention in recent times, as seen from the aforementioned quote, is hedge fund activism. Hedge fund activism has been on a rampage in recent times. Since 2013, when the current wave of activism began, hedge fund activists have turned up the heat in their quest to improve corporate governance. According to Lazard (2018b), the first two quarters of 2018 are the most two active quarters ever, with a record 145 campaigns having been launched against 136 companies. The war chest of activists also has set a record during this period, with an all-time high of approximately $40.1 billion deployed by activists in new campaigns.

Furthermore, activist campaigns are not only restricted to the United States, where most of these activists are based, but are also spreading globally. Companies based in Europe were activist targets for nearly a quarter of all activist capital deployed and campaigns launched during the first two quarters of 2018 (Lazard, 2018b).

1.2.Efficiency of Hedge Fund Activism – A Brief Overview

With hedge fund activists on "steroids," there has never been a more crucial time than the present to explore whether activists create value. Hedge fund activists are considered as activists that are more efficient because unlike other shareholder activists, they have the power to buyout the firm in the event that a target firm's management/board rejects their demands. Moreover, lack of regulation in the hedge fund industry plays a major role in providing hedge funds with enough flexibility to undertake activist demands. For example, hedge funds are not subject to the ERISA or "prudent man" regulations, unlike mutual funds, and are not required to maintain high levels of diversification for them to receive preferential tax status. Hedge funds typically "lock-up" investor capital for a prolonged period of time to carry out their strategies and ask investors to provide withdrawal requests in advance, thereby providing them with an advantage over mutual funds (who are required to maintain high levels of liquidity and will have to accept daily withdrawal requests) since activist campaigns may require the activist to hold large, illiquid blocks for prolonged periods of time.

Moreover, activism is considered to be a value increasing strategy, but at the cost of increased efforts by the activist. However, hedge fund managers usually receive 20% of the annualized hedge fund returns as part of their performance based-compensation and therefore, activism can yield greater compensation to the hedge fund manager and will therefore, provide them with greater incentives. Hedge fund activists are also relieved from any major conflicts of interest because they have no obligations towards the management of the target firms whose

shares they hold. The interventionist tactics employed by activist hedge funds can also provide them an added advantage over other shareholder activists, that is, in addition to filing shareholder proposals, writing letters, speaking at general meetings, and talking to the media (which are also carried out by traditional activists), they also often request meetings with the company chairman or the CEO and they are also more willing to become more involved in board elections and in litigation. This enables them to be more pro-active with the management of their target companies, thereby allowing them to be more efficient than other shareholder activists.

Hedge fund activists also solicit support from other activists to form "wolf-packs" ((Briggs, 2007) ;(Coffee Jr and Palia, 2016)), and try to win the support of institutional investors and proxy advisors (Alexander *et al.*, 2010). Activist hedge funds also employ professional help, including hiring communication agencies, proxy solicitors, and lawyers and are willing to engage in board election contests and pay for the election campaign, an attribute that the target companies are well aware of. Knowledge of the composition of the shareholder base and the willingness of other shareholders to work with the activists are also important factors evaluated by hedge fund activists before engaging.

1.3.Motivation for This Thesis

While most studies look at short-term value creation, very few studies have examined the long-term impact of hedge fund activism. Even fewer studies have examined the mechanisms through which hedge fund activists create value.

There have been growing calls among politicians, lawyers, academicians, and journalists to regulate hedge fund activists given their growing influence on the economy. There has even been a serious attempt, albeit unsuccessful, at regulating the likes of Paul Singer, Carl Icahn, and Jeffrey Smith. The Brokaw Act, named after the site of an activist campaign, was

introduced by Senators Tammy Baldwin and Jeff Merkley, on March 17, 2016, in order to rein in some of the freedom enjoyed by activists (Brav,Heaton and Zandberg, 2018). Branding hedge fund activists as "predatory," Senator Baldwin declared that the aim of the Brokaw Act was to increase the transparency and strengthen the oversight of activist hedge funds.

While the Brokaw Act failed to pass, it still represents the first attempt at government regulation of activist hedge funds (Brav,Heaton and Zandberg, 2018). Moreover, it most certainly will not be the last attempt.

However, several questions need to be answered before Congress takes another swing at regulating hedge fund activists. First, do hedge fund activists need to be regulated? Second, is there a need to curb the tactics and freedom of hedge fund activists? Third, are hedge fund activists "wolves," whose goal is to extract short-term profits at the expense of the long-term performance of their targets? Finally, are activist hedge funds worse than other shareholder activists such as mutual funds and pension funds?

While some of the questions have been answered by existing studies, most remain unanswered. Moreover, it is important to understand the mechanisms through which hedge fund activists create value before regulating them. This is because understanding the mechanisms would help to understand the long-term impact of hedge fund activism better. For instance, exploring whether activist hedge funds create tangible long-term improvements or whether they engage with their targets for short-term "uptick in stock prices" is one way of understanding whether hedge fund activism is beneficial to the economy.

1.4.Research Questions

This PhD thesis is an attempt at examining some of the popular mechanisms of hedge fund activism. It also attempts to explore the efficiency of hedge fund activists compared to other shareholder activists. Finally, it explores the all-important question: do hedge fund activists

play the long-term game or are they simply interested in short-term stock price boosts? These objectives are attained by examining the following research questions:

1. Do acquirers gain more by acquiring targets that have been subjected to activism by investors?
2. Is the premium received by the shareholders of targets that are subjected to activism dependent on the method of payment?
3. Are divestitures a new value-creation channel for hedge fund activists?
4. Do the goals pursued by hedge fund activists pertain merely to takeovers or do they instead involve long-term value?
5. Do hedge fund activists, using derivatives, create more value for their targets?
6. Does the use of derivatives reduce the share price volatility of targets of hedge fund activists?
7. Does the use of derivatives increase the probability of takeovers involving hedge fund activists?

These research questions are explored using a comprehensive hand-collected database[1] of activist campaigns from 1994 until 2016[2].

1.5.Thesis Chapters – A Brief Overview

This thesis consists of three chapters. The first chapter explores the relationship between hedge fund activism and corporate takeovers, from the perspective of acquiring firms. Existing studies ((Greenwood and Schor, 2009) ;(Becht *et al.*, 2017)) have explored this relationship from the

[1] The activism database is constructed by hand-collecting SC 13D filings from the Security and Exchange Commission's (SEC) EDGAR database. It is one of the most comprehensive databases available, and is therefore, a useful contribution to the research on shareholder activism in general, and hedge fund activism in particular.

[2] DISCLAIMER: This database will be continuously updated as and when information about new shareholder activists is gathered.

perspective of activist targets and have found that activists create short-term value for their targets by pushing the sale of their targets. However, there is limited evidence of whether the acquiring firms gain through acquiring activist targets. Evidence of acquirer value creation would imply that activists indirectly create value to these acquirers by playing the role of "matchmakers," and that hedge fund activists are beneficial to firms without targeting them, a point that would favour not regulating them.

The second chapter explores the relationship between hedge fund activism and corporate divestitures (spinoffs and selloffs). Activist-driven divestitures have been on the surge. Emrick *et al.* (2017) find that almost 20% of the companies that announced spinoffs during the period 2011-2016 were targets of some form of shareholder activism. Furthermore, 28% of all M&A driven activist campaigns launched in the third quarter of 2018 resulted in a divestiture, according to Lazard (2018a). The rising popularity of divestitures among hedge fund activists provides them with a perfect platform to analyse the long-term impact of hedge fund activism, especially since divestitures can lead to two paths: sale post divestiture (Greenwood and Schor, 2009) (short-term) or improved managerial focus ((Desai and Jain, 1999) ;(John and Ofek, 1995)) resulting in better firm performance (long-term). I also use divestitures as a platform to test the efficiency of hedge fund activists compared to other shareholder activists since divestitures are popular among all activists, irrespective of their type (Emrick *et al.*, 2017). If activist hedge funds initiate divestitures with the intent of improving managerial focus and if it results in a better firm performance, then it can be implied that they are more efficient than other shareholder activists. Moreover, it can be safely implied that the tactics and financial instruments used by hedge fund activists are effective in long-term value creation and that regulating activist hedge funds would be detrimental to the effectiveness of their campaigns.

The final chapter explores the relationship between hedge fund activism and derivatives. It examines whether hedge fund activists who use popular derivatives such as options, futures,

and forwards create more value than hedge fund activists who do not use derivatives. If the latter creates more value, then, it sends a message to hedge fund activists that not using derivatives might be more effective than using derivatives. According to Partnoy (2015), activist hedge funds rarely use derivatives, and this is examined in detail in the final chapter. If the market rewards those activists who do not use derivatives, then future activist campaigns are less likely to see hedge fund activists using derivatives. As a result, the provision of Brokaw Act that calls for expanding the concept of beneficial ownership to include more derivatives would amount to unnecessary regulation. Therefore, the final chapter provides a perfect platform to examine the role that derivatives play in hedge fund activism and how important derivatives are in value creation.

1.6.Main Findings

Several interesting and influential findings emerge from my thesis. Chapter 3, which analyses the indirect impact of activist-driven acquisitions, finds that acquirers participating in activist-driven acquisitions outperform other acquirers by about 2 percentage points around the time of the deal announcement, even after controlling for the firm and deal specific characteristics. This chapter also provides a glimpse of the long-term game plan of shareholder activism since the outperformance is mainly observed in non-cash deals, where the activist maintains his/her stake in the merged firms. While the findings of this chapter suggest that activist-driven acquisitions are value creating for both targets and acquirers, they also question the value creation in activist targets through takeovers. This is mainly because although activist targets receive a 20% premium on the announcement deal, the difference between activist premium and "non-activist" premium is insignificant. In other words, hedge fund activists do not make much headway in convincing critics that they are good for the economy, despite the indirect positive impact they create for acquiring firms.

Fortunately, the story does not stop with Chapter 3. Chapter 4, that looks at the next popular activist mechanism, corporate divestitures, finds convincing evidence for the long-term value creating ability of hedge fund activists. Furthermore, Chapter 4 also suggests that not only are hedge fund activists more efficient than other shareholder activists, but they also create tangible long-term value in their targets compared to their mutual fund or pension fund counterparts. Moreover, there is no evidence of hedge fund activists using divestitures as a stepping-stone to eventually push for the sale of their targets. In other words, there is no evidence of hedge fund activists pursuing the "making a quick buck" approach. While Chapter 3 provides a glimpse of the long-term value creating ability of hedge fund activists, Chapter 4 leaves no space for critics to question the long-term game plan of hedge fund activists. Hedge fund activists are no "wolves," whose goal is short-term profits. On the contrary, they are "shepherds," who guide their targets in creating long-term value.

Therefore, while Chapters 3 and 4 provide concrete evidence against regulating hedge fund activism, critics can still attack the methods used by hedge funds, which could be detrimental to retail investors in particular, and the stock markets in general. For instance, one of the reasons why hedge fund activists can be efficient, is because hedge funds are known to routinely use leverage and options to increase their effective ownership stakes in their targets (Hu and Black, 2007). Increased ownership implies increased voting power, and the use of leverage and options, therefore, can increase the probability of a successful activist campaign and provide hedge funds an added advantage over other shareholder activists such as mutual funds and pension funds, whose charters prevent them from using these features. Chapter 5 examines the role of derivatives in hedge fund activism and finds that the market rewards targets of hedge fund activists who did not use derivatives more than targets of activist hedge funds who used derivatives. It also finds that hedge fund activists who do not use derivatives increase the probability of mergers and acquisitions, one of the most popular activist

engagements, compared to those activist hedge funds who used derivatives. Overall, it can be established that derivatives are ineffective financial instruments when undertaking activist engagements.

1.7.Research Contributions

The contributions of Chapter 3 are threefold. First, it provides a glimpse of the ability of activists to play the long-term game while undertaking activist campaigns, as evidenced from the gains to acquiring firms from non-cash deals. This also suggests that activists are more than happy to play a potential constructive role in the merged firm following the acquisition. Second, the takeover premiums received by the shareholders of targets with and without activists do not differ significantly. This implies that contrary to the suggestion of some earlier studies, firms did not need to be sold to realize the value of the firm or be the subject of activism. However, it is possible that the value created by activists' actions is already reflected in the market value of the target before the takeover deal is announced. Therefore, the lack of difference in the premium cannot be used to challenge the value creating ability of activism. Finally, this chapter also contributes towards understanding the ability of hedge fund activists to create value compared to other shareholder activists. While activist hedge funds do create value to the acquiring firms, thereby providing evidence on the positive spillover effects of hedge fund activism, they are not found to be more efficient than other shareholder activists.

Chapter 4 also makes a threefold contribution to the existing research on hedge fund activism. First, it documents a new value-creation channel of hedge fund activism: improved managerial focus through divestitures. More specifically, it finds that hedge fund activists, in addition to being efficient external monitors, also improve managerial focus through corporate divestitures by using interventionist tactics, thereby creating tangible long-term

value. Second, this chapter contributes to the raging ongoing debate over whether hedge fund activism presents a critical problem for US public firms, their investors and the economy. While some studies suggest that hedge fund activists improve the performance of targeted firms (for example, (Brav,Jiang and Kim, 2015); (Brav *et al.*, 2018)), benefitting all shareholders by promoting managerial and directorial accountability ((Bebchuk,Brav and Jiang, 2015); (Boyson,Gantchev and Shivdasani, 2017)), there is a growing amount of studies, which suggest that the substantial gains realized by hedge funds through activism impair the long-term performance of firms (Cremers *et al.*, 2018), or hinder the wealth transfer from other shareholders or stakeholders (Klein and Zur, 2011). The findings of this chapter suggest that hedge fund activists are more than able to achieve long-term value creation and will not sacrifice it for the sake of making a quick buck for their investors. By using divestitures to improve managerial focus, hedge fund activists actually shepherd their targets in creating long-term value, thereby contributing to the growing literature on the long-term impact of hedge fund activism. Finally, and more importantly, this study also contributes by playing an advisory role for policymakers and investors: value creation by hedge fund activism is not restricted to upticks in stock prices. Hedge fund activists are in for the long haul while undertaking activist engagements. Other shareholder activists (such as mutual funds) could be nudged towards partnering with hedge fund activists rather than undertaking their own activist engagements, especially since hedge fund activists (unlike their mutual fund counterparts) are free of any major conflicts of interest and have enough flexibility to undertake activist engagements that create long-term value.

Chapter 5 also provides a threefold contribution to the existing literature on hedge fund activism. First, this is the first study that analyses the role of derivatives in hedge fund activism in a comprehensive manner. Existing studies have considered the possibilities of derivatives influencing hedge fund activism, but have not studied the role of derivatives,

especially with respect to volatility. Second, this study contributes by studying the market reaction to the use of derivatives by hedge fund activists and finds that although hedge fund activists who did not use derivatives created more value compared to those hedge fund activists who used derivatives; using derivatives did not result in value destruction. Therefore, policymakers are urged to be more cautious while introducing provisions to regulate activist hedge funds. For instance, given that there is value creation using derivatives, the provision of the now failed Brokaw Act that calls for expanding the concept of beneficial of ownership to include more derivatives (Brav, Heaton and Zandberg, 2018) is not effective. Finally, this study contributes by providing a testing ground for studying the ability of hedge fund activists to create value through the use of derivatives. The findings of this study suggest that hedge fund activists who do not use derivatives increase the probability of takeover of their target companies, thereby indicating that derivatives are ineffective financial instruments while undertaking activist engagements.

Hedge fund activists are here to stay. They will continue to use aggressive tactics, complex financial instruments, mechanisms such as breakups and acquisitions, in order to create value. However, despite what critics say, they are not "wolves," whose goal is to extract short-term profits. On the contrary, they are "shepherds:" efficient and long-term value-creators. With sufficient evidence that they create value not only to their targets but also to non-targets, regulating hedge fund activism can only be detrimental to overall corporate governance.

The public company was not destined to be a bureaucracy run by distant managers accountable to institutions run by computers. Hedge fund activists have the potential of becoming "capitalism's unlikely heroes." (Economist, 2015). Regulation will simply impede this value-creating revolt.

The rest of my thesis is structured as follows: Chapter 2 provides a comprehensive literature review of shareholder activism. Chapter 3 talks about the relationship between activism and takeovers. Chapter 4 examines the relationship between activism and divestitures. Chapter 5 analyses the role of derivatives in hedge fund activism. Finally, Chapter 6 concludes.

CHAPTER 2 - HEDGE FUND ACTIVISM: A REVIEW OF LITERATURE

2.1. Birth of Shareholder Activism

An increase in institutional shareholdings, particularly among funds seeking to mimic stock index returns coincided with the rise of shareholder activism in the mid-1980s (Denes,Karpoff and McWilliams, 2017).

Black (1992) suggests that for systemic issues that arise at many firms, it is valuable to assign institutional money managers to monitor corporate managers since there is reduced risk of institutional money managers extracting private benefits from the firm. He also suggests that the case for shared institutional voice is stronger than the case for direct institutional control of a firm.

Thus, according to Black (1992), shareholder activism is the natural outgrowth of a restrictive external market for corporate control and is a result of investors seeking alternate methods to monitor managers and encourage superior performance.

Prior to the rise of hedge fund activism, pension funds and mutual funds were at the forefront of shareholder activism. Initial studies on shareholder activism, however, find limited evidence of superior value creation.

Karpoff, Malatesta and Walking (1996) find that firms that endure poor prior performance, operating returns, and sales growth are more likely to attract corporate governance proposes. However, they find negligible effects on company share values, top management turnover,

and improvement in operating returns following the shareholder-initiated proxy proposals. They also find that even in the event of proposals garnering a majority of shareholder votes, the targeted firms do not witness an increase in share prices or any discernible changes in firm policies.

Opler and Sokobin (1996) examine the performance of 96 firms that appear on the focus list of the Council of Institutional Investors in 1991, 1992, and 1993 relative to control groups. They find that the firms on the focus list experience, on average, an increase in share price of 11.6% above the S&P 500 in the year after being listed. They conclude that this increase suggests that coordinated institutional activism created shareholder wealth.

Smith (1996) examines the impact of activism efforts by CalPERS on 51 targets to investigate the firm characteristics that lead to shareholder activism as well as the effects of activism on the governance structure of targeted firms. He finds a positive correlation between firm size and the level of institutional holdings and the probability of being an activist target. He also finds that 72 percent of firms adopt the proposed changes suggested by CalPERS or make changes, which results in a settlement. While shareholder wealth increases for firms that adopt the proposed changes and shareholder wealth decreases for firms that resisted, there is no statistically significant change in their operating performance as a result of the activist efforts.

Wahal (1996) examines the efficacy of pension fund activism using activist efforts by nine major pension funds from 1987 to 1993. He finds a shift in activist efforts from takeover-related proxy proposal targeting in the 1980s to governance-related proxy proposal and non-proxy proposal targeting in the 1990s. He finds no evidence of significant abnormal returns around the time of activist disclosures. Furthermore, there is no evidence of signalling long-term improvement in either stock price or accounting measures of performance in the post-

targeting period. Overall, the results of this paper suggest that pension fund activism is an ineffective substitute for an active market for corporate control.

Black (1998) examines corporate governance activist by institutional investors in the United States and finds that a small number of American institutional investors, mostly pension funds, spend a trivial amount of money on activism efforts that are overt and were without proxy contests or board representation. He concludes, "the currently available evidence, taken as a whole, is consistent with the proposition that the institutions achieve the effects on firm performance that one might expect from this level of effort – namely, not much." ((Black, 1998), p. 459).

Gilland and Starks (1998) suggest that the primary motivation for shareholders to undertake activist campaigns is the potential to increase the value of their investments by undertaking costly monitoring activities. However, they find that the empirical evidence related to the influence of shareholder activism is mixed, with limited evidence of improvement in long-term stock market performance or operating performance post the activism campaign.

Gillan, Kensinger and Martin (2000) conduct a case study on Sears, Roebuck and Co. to provide a practical perspective on corporate governance, shareholder activism and corporate restructuring. They find that the ensuing shareholder activism that followed post the poor performance of Sears after diversifying into financial services during the 1980s results in the firm divesting its financial services operations and refocusing on retail, which lead to a gain of $1.5 billion, with approximately $1.113 billion resulting from the announced breakup of Sears. They attribute the initial performance problems of the firm to the flawed governance structure.

Del Guercio and Hawkins (1999) examine the impact of pension fund activism by studying the shareholder proposals of five of the largest and most active funds and find that these

proposals are followed by significant additional corporate governance activity and broad corporate changes. Overall, they suggest that shareholder proposals need to be viewed as complementary elements in an array of governance mechanisms and resorting to only costly mechanisms can result in smaller conflicts remaining unresolved. Overall, they suggest that it is important to recognise the effectiveness of shareholder proposals in a full spectrum of corporate governance tools.

Prevost and Rao (2000) find that targets that are subject to pension fund activism for the first time experience a decrease in shareholder wealth, while targets that are subject to pension fund activism repeatedly experience negative wealth effects over a much wider event window. The results are also consistent with respect to long-term changes in operating performance and stock returns.

Carleton, Nelson and Weisbach (1998) analyse activist efforts by financial institutions by analysing a private database consisting of the correspondence between TIAA-CREF and 45 firms it contacted about governance issues between 1992 and 1996 and find that TIAA-CREF is able to achieve success more than 95 percent of time. At least 87 percent of the targets subsequently take actions to comply with the agreements reached with TIAA-CREF.

Thus, while there is some evidence of value creation by shareholder activism, overall, the initial evidence suggests that the activist efforts by pension funds and financial institutions do not create much value to their targets.

2.2. **Rise of Hedge Fund Activism**

However, the rise of hedge fund activists changed the face of shareholder activism. Armed with tools not available to other shareholder activists, activist hedge funds are placed in a much better position to create value to their targets.

Existing studies have found that hedge fund activists create value to their targets, unlike their mutual fund/pension fund counterparts.

Briggs (2007) conduct a legal, empirical, and theoretical study on hedge fund activism to understand the implications of hedge fund activism for corporate governance in the United States and finds limited evidence for dangerous conflicts of interest of activist hedge funds. He states that an almost unprincipled balance-of-power political model best explained the hedge fund activism phenomenon. He concludes that if the activities of hedge fund activists cause managements to review and re-assess their strategies, then corporate governance will improve.

Brav et al. (2008), the first paper to analyse the impact of hedge fund activism using a large-scale sample over the time period 2001-2006, find that activist hedge funds target the typical "value" firms with low market to book value, and are profitable with sound operating cash flows and return on assets. They find that payout at these target firms is lower, the firms have more takeover defences and greater CEO wages compared to matched firms, and these firms exhibit significantly higher institutional ownership and trading liquidity. They also find that activist hedge funds propose strategic, operational, and financial remedies with success or partial success in two-thirds of the cases and the target firms are found to have experienced abnormal returns of 7% with no reversal in the subsequent year. They also find that some of the significant outcomes experienced by target firms are increases in payout, operating performance, and higher CEO turnover. This paper finds new evidence on the mechanisms and effects of informed shareholder monitoring.

Clifford (2008) studies the effects of hedge fund activists during the period 1998-2005 and finds that the organizational structure of hedge funds like longer lock-ups and withdrawal notification periods play a major role in assisting their activist efforts. The activist hedge

funds themselves are found to have generated greater returns than their passive counterparts, thereby leading to the suggestion that their returns could have mitigated their monitoring costs. He also finds that firms targeted by activist hedge funds earn larger excess stock returns and observe an increase in return on assets (ROA).

Klein and Zur (2009) compare the confrontational campaigns between hedge fund activists and other private investors and find that the similarities include significant positive market reaction around the initial SC 13D filing date, significant positive returns over the subsequent year, high success rate of achieving the activists' objectives, and frequent success in board representation through real or threatened proxy solicitations. They also find that the differences between the confrontation campaigns of the two groups are that hedge fund activists target more profitable firms than other investors and address cash flow agency costs whereas other private investors change the target firms' investment strategies. They also suggest that hedge fund activists extract cash from the firms by increasing their targets' debt capacity and demanding higher dividends from their targets.

Boyson and Mooradian (2009) find that targets of intense hedge fund activism display strong improvements in operating performance for up to three years following the activist campaigns, whereas the remaining targets do not. The targets of intense activist hedge funds also experience better short-term stock performance than either a matched sample of targets or targets of less intense hedge fund activism. They also find that both intense and non-intense hedge fund activists gain from the improved target stock performance during the activism period, and there is weaker evidence that an investor who attempts to mimic an activist hedge fund portfolio would also profit.

Becht,Franks and Grant (2010) analyse European activist interventions by hedge funds, focus funds, and other activist investors from 2000-2008 using a sample that included both public

and private interventions. They find that public activist interventions are associated with positive abnormal returns around the time of activist stake disclosures and the returns are more than those experienced by private activism events, and this is attributed to a higher probability of takeovers of the target firms. They also find that legal jurisdiction has no influence on the activist outcomes across different counties.

Butu (2013) argues that hedge funds play a significant role in the governance of public companies and cause polemic. By analysing the nature of hedge fund activism using the Security and Exchange Commission (SEC) filings and assessing the various types of engagement made by activist hedge funds, Butu (2013) finds a positive market reaction around the announcement of hedge fund interventions. Furthermore, she also reports evidence of larger positive market reaction to more aggressive types of activism.

Boyson and Mooradian (2011) examine the role of activist hedge funds as agents of corporate change and find that they improve both short-term stock performance and long-term operating performance of target firms with the performance changes most observable in those target firms where activist hedge funds seek changes in corporate governance and reduction in excess cash. Their findings also prove that activist hedge funds themselves benefit from their efforts with their risk-adjusted annual returns being about 7-11% higher than non-activist hedge funds and those hedge funds that pursue less aggressive activism.

Krishnan,Partnoy and Thomas (2016) examine the relationship between characteristics of activist hedge funds and announcement returns. They find that activist interventions involving large investments in large target companies are more positively related to announcement period returns, whereas interventions that are more frequent are negatively related to announcement period returns. They also develop a hedge fund reputation measure based on which it is observed that large reputed hedge fund activists have more assets under

management, longer track record of activism, history of obtaining board assets, and invest in targets with the intention of making changes to targets' board. Firms targeted by hedge fund activists with top reputations enjoy superior operating performance post intervention.

Hedge fund activism also has a substantial positive effect on similar firms that are not targeted by them as observed by the findings of Jotikasthira,Gantchev and Gredil (2018). They find that firms in a given industry make governance changes after a hedge fund activist targets a competitor and find that the valuations of these firms improve upon the revelation that a hedge fund activist targeted another firm in the same industry. They also find that the probability of being targeted by a hedge fund activist is, therefore, reduced in the firms that are not targeted when they improved their governance.

Aslan and Kumar (2016) find that hedge fund activists have significant real and stockholder wealth effects on product markets by examining a unique database on hedge fund activism during 1996-2008 that identifies horizontal and vertical product market relationships of target firms, and by addressing the endogeneity problem from latent industry-wide structural changes.

Mihov (2016) examines pre-disclosure ownership accumulations of activist hedge funds and presents robust evidence on the effect of price impact of trading, or Kyle's lambda, on these accumulations. The paper finds that activist hedge funds are less likely to target illiquid firms, and when they do target an illiquid firm, the activists opt for private transactions to limit the price impact of their trades. Open market transactions are found to have pursued by activist investors while targeting firms with illiquid stock. Overall, the findings of this paper suggest that the market impact could be a factor with significant implications for shareholder activists, and more generally, corporate governance.

Hedge funds are also found to have created value, through another channel, in the form of enhancing corporate innovation (Wang and Zhao, 2015). Wang and Zhao (2015) study the effect of hedge fund ownership on corporate innovation using NBER patent data and hedge fund holdings in US firms during 1998-2006. They find that hedge fund ownership increases both patent quantity and quality, even after controlling for endogeneity. The mechanism by which hedge funds promoted innovation is by enhancing R&D productivity and innovation efficiency rather than by increasing R&D input.

The findings of Wang and Zhao (2015) are further supported by He,Qiu and Tang (2014), who find that activist hedge funds target firms with poor innovation efficiency and create significant improvements in innovation output and these innovation improvements are observed in high and low competitive industries. They also find that activist hedge funds generate positive abnormal returns to shareholders of target innovative firms during the 5-year period post intervention, thereby concluding that hedge fund activists are not myopic investors and that they generate long-term benefits to shareholders of innovative firms by enhancing the innovation output of their targets.

Brav *et al.* (2018) find that targets of hedge fund activists experience an improvement in innovation efficiency post-intervention and an increase in innovation output despite experiencing a decrease in R&D expenses post-interventions. They attribute these improvements to the by-product of asset reallocations triggered by activist interventions at the target firms.

2.3. Are Hedge Fund Activists Damaging to the Economy?

The rise of hedge fund activists has led to a widespread policy debate among policymakers as to whether they were improving or deteriorating the economy.

2.3.1. Evidence of Positive Impact of Hedge Fund Activism

Bebchuk *et al.* (2013) contribute to this debate by providing the first systematic evidence on the public disclosures of purchases of 5% or greater stake in public companies and find that several of the factual premises of a rulemaking petition requesting that the SEC shorten the ten-day window are not consistent with the evidence. They find that the evidence do not support the petition's key claim that changes in market practices and technologies have operated over time to increase the magnitude of pre-disclosure accumulations, thereby making existing rules "obsolete." Furthermore, they find that activists' purchases are disproportionately concentrated on the day they cross the threshold and the following day, even though they wait the full ten days to disclose their stakes. This indicates that the practical implications in pre-disclosure accumulations between the existing regime and the rules in jurisdictions with shorter disclosure windows are likely smaller than the petition assumed.

Bebchuk *et al.* (2013) suggest that the SEC should consider tightening the enforcement of current rules on hedge fund activism, especially the rules regarding the disclosure windows, before examining proposed acceleration of deadline.

Coffee Jr and Palia (2016) provide an analytical viewpoint on the recent research on hedge fund activism by surveying the regulatory and institutional developments that have potentially reduced agency costs and increased payoffs from hedge fund activism, with a particular focus on "wolf-pack" tactics employed by activist hedge funds. They conclude by examining the policy levers that could encourage or discourage hedge fund activism and also consider the feasibility of the possible reforms and predict that the impact of most regulatory changes is likely to be marginal.

Bebchuk,Brav and Jiang (2015) test the empirical validity of the claim that interventions by hedge fund activists have a detrimental effect on the long-term interests of companies and

their shareholders by examining a long five-year window following activist interventions and found that the data did not support this claim. Their paper found no evidence that activist interventions, including the most criticized investment limiting and adversarial, are followed by short-term gains in performance that came at the expense of long-term performance and the positive stock-price spike accompanying activist interventions reflects correctly on the long-term consequences of interventions. There is also no evidence of pump-and-dump patterns in which an activist exit was followed by abnormal long-term negative returns. These findings imply that policymakers and institutional investors should not accept the validity of assertions that activist interventions are costly to firm and their shareholders in the long term and such claims do not provide a valid basis for limiting the rights, powers, and involvement of shareholders.

Cremers *et al.* (2018) examine the association between hedge fund activism and firm value. They employ matching procedures to mitigate the selection effects surrounding the type of firms that are chosen as targets by activist hedge funds. They find that, subsequent to the start of activism, targeted firms improve less in value compared to similarly poorly performing control firms that are not subject to activist campaigns. Furthermore, both target and control firms experience positive and significant long-term abnormal stock returns. Hedge fund activists are found to have strong stock selection skills as well as strong trading skills and these could be the reasons for their outperformance.

Wong (2019) analyse whether there is any evidence of wolf pack formation during hedge fund activism and find that investors other than the lead activist accumulate significant share-holdings before public disclosure and these share accumulations are more likely to be mustered by the lead activist rather than occurring spontaneously. The presence of a wolf pack is also found to be associated with a greater likelihood that the activist will achieve its stated objectives and experience higher future returns over the campaigns duration.

Gantchev and Jotikasthira (2018) investigate the role of institutional trading in the emergence of hedge fund activism and find a positive correlation between institutional selling volume and net hedge fund purchases of stocks of target companies before the launch of an activism campaign. They find that activist hedge funds use institutional sales to camouflage their purchases, which then enables them to obtain additional trading gains, thereby covering their monitoring costs.

2.3.2. Evidence of Negative Impact of Hedge Fund Activism

While the aforementioned studies agree all arrive at the same conclusion that hedge fund activism creates value, recent research has found that not all activist efforts necessarily create value.

For instance, Klein and Zur (2011) find that confrontational campaigns undertook by hedge fund activists significantly reduce bondholder wealth.

Jory, Ngo and Susnjara (2017) also support these findings. Their paper examines the wealth effect of shareholder activism on bond returns as well as the extent to which wealth is transferred from bondholders to shareholders. By examining a sample that consists of both hedge fund activists and other large shareholders, and which covers both investment-grade and speculative-grade bonds, they find that activists' demands cause a significant decline in bond returns and affect the long-term bonds the most. They also find a strong association between the bond price declines and dividend increases following the activists' demand, with dividends acting as a proxy for the transfer of wealth from bondholders to shareholders. They also find that long-term and lower rated bonds are affected most significantly and the findings suggest an inverse association between bond returns and stock returns at firms targeted by activists.

Chen and Jung (2016) examine whether the presence of hedge fund activists affects firms' disclosure decisions and find that firms are more likely to cease providing financial guidance

or reduce the information in the guidance in quarters subsequent to new investment by activist hedge funds. The findings remain the same even for firms who have good quarters and who consistently provide guidance in previous quarters. The findings of this paper indicate a negative and possibly unintended consequence of activist hedge funds' investment in firms. These findings also provide some counterbalance to the numerous positive consequences documented in prior literature on hedge fund activism.

Feng,Xu and Zhu (2016) study the threat of hedge fund activism and its effects on a firm's potential as well as on the existing creditors of the firm. This paper finds that when an industry is affected by an abnormal amount of hedge fund activist intervention, those target firms with an ex ante high likelihood of being targeted experience significant increases in bond yield and default probability as well as deteriorations in bond and firm ratings when compared with the rest of the firms in the industry. It is also found that these effects are more pronounced in those target firms that experience greater improvements to equity performance, those firms that were poorly governed, and when the activist hedge fund interventions are more hostile. The findings of this paper suggest that the managerial response to the threat of hedge fund activism include exploitation of bondholders, to which the potential creditors reacted negatively.

Finally, Agrawal and Lim (2017) find that the stock price reaction to activism announcement predicts future increases in pension underfunding, thereby indicating a negative effect of hedge fund activism on workers' welfare.

2.4. Studies on Value-Creating Channels of Activist Hedge Funds

Despite the extensive findings on hedge fund activism, there are still gaps in the existing literature, which need to be examined to fully understand whether hedge fund activists are truly efficient in creating gains not only to the shareholders of their targets, but also to the economy as a whole.

For instance, there is limited evidence on the mechanisms through which hedge fund activists create value.

Greenwood and Schor (2009) find that large positive abnormal returns are observed when a hedge fund announces activist intentions towards a publicly listed firm. They attribute the returns to the ability of activists to force the target firm to be acquired. They study a comprehensive sample of SC 13D filings for the period 1993-2006 and find that both announcement returns and long-term abnormal returns are high for targets that get acquired, but insignificant for targets that stay independent. Activists are also found to increase the probability of the acquisition of the target firm. Subsequently, it also finds that activists' portfolios perform poorly during periods when the market wide takeover interest declines.

Becht *et al.* (2017) find that the returns to hedge fund activism are driven by engagement outcomes. They study a sample of 1,740 activist engagements from 23 countries, estimate activism performance across North America, Europe, and Asia, and attribute the variation in the performances of activism to the differences in outcomes of the engagements emerging across countries. They find significant and profitable governance changes to be preceding the eventual takeovers of activism targets. They conclude that although the United States model of activism is found to be copied by foreign activists, non-US activists outperform the U.S. activists in their respective domestic markets.

Boyson,Gantchev and Shivdasani (2017) also find that hedge fund activism creates shareholder value primarily by putting the targeted firms up for sale. They find that activist-driven mergers are more likely when the activist hedge fund has a record of aggressive intervention, substantial prior merger experience, or has switched from passive to activist ownership. It finds that activist hedge funds are more effective in creating value by attracting third party bidders than through takeovers initiated by the activist.

While the aforementioned studies explain some of the mechanisms through which, hedge fund activists create value, majority of studies still focus on the stock returns around the time of activist disclosure. This thesis aims to fill the gaps by focusing on more mechanisms through which hedge fund activists create value for their targets.

CHAPTER 3 – HEDGE FUND ACTIVISM & CORPORATE TAKEOVERS

3.1.Introduction

Activist shareholders, usually hedge funds, seek seats on the company's board and exert influence on the decision-making process of the company. Several studies ((Kleing and Zur, 2009); (Boyson and Mooradian, 2011); (Brav,Jiang and Kim, 2015) ;(Clifford, 2008) ;(Brav *et al.*, 2008) ;(Brav *et al.*, 2018)) suggest that activists can enhance firm value by influencing several aspects of company management including business strategies and managerial freedom.

However, very few studies have examined the mechanisms through which activist shareholders create value. One such study was conducted by Greenwood and Schor (2009) who attribute the positive abnormal returns experienced by target shareholders, when an activist discloses its stake in the target, to the ability of activists to force the company to get acquired. Becht *et al.* (2017) further support this finding and find that the target shareholders gain the most when takeovers are preceded by other activist outcomes.

While these findings suggest that activists create value for their target firms through takeovers, there is limited evidence on the impact of activist-initiated acquisitions on the acquiring firms. If activist-initiated takeovers do create value for acquirers, then activists can be considered as "matchmakers," and it would imply that hedge fund activists are not only beneficial to their targets, but also to firms that are not even on their radar. This indirect value creation would present a strong case for not regulating activists.

Furthermore, there is limited evidence on whether the premium received by the shareholders of targets that are subjected to investors' activism is dependent on the methods of payment in

takeover deals. The relationship between takeover premia and the method of payment used in settling the activist driven takeovers is important since it signals the sustainability of value created by activism, if any. If the payment is cash only, it provides activists with an ideal opportunity to 'cash and run' while in the case of non-cash deals (including stocks and other securities), activists maintain their stake in the merged firms.

Therefore, this chapter aims to make a three-fold contribution to the literature on activism by investigating two main issues: (i) do acquirers gain more by acquiring targets that have been subjected to activism by investors?, and (ii) is the premium received by the shareholders of targets that are subjected to activism dependent on the method of payment?

Several findings emerge. First, acquirers participating in activist-initiated acquisitions outperform other acquirers by approximately 2 percentage points around the time of deal announcement, once firm and deal specific characteristics are controlled for. This outperformance is attributed to gains from non-cash deals where the activists maintain their stakes in merged firms. This provides the first evidence of the long-term game plan of shareholder activism, although there is no significant effect of activist involvement on the acquirers' long-term performance.

Second, there is no significant difference between the premium received by activist targets and the premium of other targets, although the activist targets receive a 20% premium, on average, around the deal announcement.

Finally, while acquirers benefit from non-cash activist-initiated deals, activist targets benefit more in cash only deals ('cash and run').

The findings of this chapter have several significant strategic implications. First, this chapter documents a new mechanism through which activists create value: *non-cash activist-initiated takeovers.* That is, this chapter provides a glimpse of the ability of activists to play the long-

term game while undertaking activist campaigns, as evidenced from the gains to acquiring firms from non-cash deals. This also suggests that activists are more than happy to play a potential constructive role in the merged firm following the acquisition. Second, the takeover premiums received by the shareholders of targets with and without activists do not differ significantly. This implies that contrary to the suggestion of some earlier studies, firms did not need to be sold to realize the value of the firm or be the subject of activism. However, it is possible that the value created by activists' actions is already reflected in the market value of the target before the takeover deal is announced. Therefore, the lack of difference in the premium cannot be used to challenge the value creating ability of activism.

Finally, this chapter also contributes towards understanding the ability of hedge fund activists to create value compared to other shareholder activists. While activist hedge funds do create value to the acquiring firms, thereby providing evidence on the positive spillover effects of hedge fund activism, they are not found to be more efficient than other shareholder activists.

Overall, while there is evidence of potential long-term play by activists and there is evidence of the positive effects of activism on non-activist targets, it is not sufficient for hedge fund activists to convince critics that they are good for the economy. This will be tackled further in Chapters 4 and 5.

The remainder of this chapter is structured as follows: Section 3.2 develops testable propositions drawing on the evidence available and by identifying the gaps in literature. Section 3.3 explains the construction of the sample used for the analysis. Section 3.4 provides the results and the empirical analysis. Finally, Section 3.5 concludes the chapter.

3.2.Literature Review and Hypothesis Development

As mentioned earlier, existing studies have examined the effectiveness of shareholder activism in general, and hedge fund activism in particular.

Briggs (2007) finds that hedge funds with significant stockholding are able to use wolf-pack tactics against companies to achieve some of their aims and force the management to bring about changes in the company strategy.

Brav *et al.* (2008), the first paper to analyse the impact of hedge fund activism using a large-scale sample over the time period 2001-2006, report that hedge fund activists employ a variety of tactics to pursue their objectives and are largely successful, even though they hold a relatively small stake.

Similarly, Clifford (2008) reports that firms targeted by hedge fund activists earn larger excess stock returns and return on assets (ROA).

Klein and Zur (2009) show that firms targeted by hedge funds earn significant positive abnormal stock returns around the initial SC 13D filing data. They also suggest that hedge funds extract cash from the firms by increasing the target's debt capacity and paying out higher dividends.

Butu (2013) argues that hedge funds play a significant role in the governance of public companies and cause polemic. She analyses the nature of hedge fund activism using the Security and Exchange Commission (SEC) filings and assesses the various types of engagement made by activist hedge funds. She finds a positive market reaction around the announcement of hedge fund interventions and attributes the evidence of larger positive market reaction to more aggressive types of activism.

Boyson and Mooradian (2011) report that hedge fund activists improve both short-term and long-term operating performance of the targeted firms. Hedge funds themselves also gain from their efforts, as the risk-adjusted annual performance of activist hedge funds is about 7% to 11% higher than non-activist hedge funds.

Hedge funds also create value through another channel in the form of enhancing corporate innovation. (Wang and Zhao, 2015). Wang and Zhao (2015) study the effect of hedge fund ownership on corporate innovation using NBER patent data and hedge fund holdings in US firms during 1998-2006. They find that hedge fund ownership increases both patent quantity and quality, even after controlling for endogeneity. The mechanism by which hedge funds promoted innovation is by enhancing R&D productivity and innovation efficiency rather than by increasing R&D input.

Wang and Zhao (2015) find that hedge funds improve corporate productivity by increasing patent quantity and quality. This evidence was further supported by He,Qiu and Tang (2014) who find evidence of activist hedge funds generating long-term benefits to shareholders of targets firms by enhancing their innovative activities.

Similarly, the findings of Bebchuk,Brav and Jiang (2015) also support the view that the effects of hedge fund activist can be long lasting, as there is no evidence of declining operating performance or abnormal long-term returns even after the hedge fund exit.

Gantchev and Jotikasthira (2018) investigate the role of institutional trading in the emergence of hedge fund activism and find a positive correlation between institutional selling volume and net hedge fund purchases of stocks of target companies before the launch of an activist campaign. They also report that hedge fund activists use institutional sales to camouflage their purchases, which allows them to obtain additional trading gains, thereby covering their monitoring costs.

Using a sample of SEC 13D filings by portfolio investors, Greenwood and Schor (2009) study the association between the positive market reaction and one of the outcomes of aggressive forms of activism – takeover. They attribute the large excess stock returns of target firms to the ability of hedge fund activists to recognize potentially undervalued companies, identifying their

potential acquirers, and forcing them to be acquired. They find that both the announcement returns and the long-term abnormal returns are high for those target firms that are ultimately acquired, but not significantly different from zero for those target firms that remain independent. They also find that when the market-wide takeover interest falls, many activists see a decline in the value of their portfolios. This is consistent with the view that the firms in the activists' portfolios are purchased in the hope of securing a takeover deal. The findings of Greenwood and Schor (2009) were further supported by Becht *et al.* (2017) who analyse nearly 1,800 interventions by activist shareholders in Europe, Asia and North America. In all three continents, they find much higher median returns to those activist engagements resulting in at least one observable outcome than those without any outcome. More specifically, when a hedge fund activist fails to change the target firm's strategy, the activism effort is significantly less profitable. Although they admit that it is difficult to understand the source of returns generated by activism, the largest abnormal returns are generated by takeover transactions averaging 17.1% during the 41-day announcement period window. Boyson,Gantchev and Shivdasani (2017) also find that shareholder value creation from hedge fund activism occurs primarily by influencing takeover outcomes for targeted firms.

While the aforementioned studies indicate that activists can enhance firm value through improved corporate governance[3] and business strategies, recent research has found that not all activist efforts necessarily create value.

For instance, as mentioned earlier, Klein and Zur (2011) find that confrontational campaigns undertook by hedge fund activists significantly reduce bondholder wealth. These findings are

[3] In particular, the findings of Boyson and Mooradian (2011), Wang and Zhao (2015), and Bebchuk, Brav, and Jiang (2015) suggest that corporate governance has indeed improve in firms targeted by activists since the findings clearly indicate improved firm-level performances following activist efforts, which can only occur if activists improved the corporate governance of their targets.

also supported by Jory,Ngo and Susnjara (2017) who find that there is a wealth transfer from bondholders to shareholders as a result of hedge fund activism, with lower returns experienced for those firms who subsequently increase their dividends twelve months post the activism announcement.

Chen and Jung (2016)find that targets of hedge fund activists are more likely to either cease providing financial guidance or reduce the information in the guidance in future quarters, thereby indicating that there exists a negative and possibly unintended consequence of activist hedge funds' investment in firms.

Furthermore, Agrawal and Lim (2017) find that the stock price reaction to activism announcement predicts future increases in pension underfunding, thereby indicating a negative effect of hedge fund activism on workers' welfare.

On balance, however, the above discussion suggests that investors' activism can improve the quality of the firm and create value. It is also evident that the value of activists' efforts is likely to remain in the long run. If the resulting effect of activism is the improved quality of the firm, then such firms should be value enhancing to their acquirers. This leads to the first testable hypothesis, that is:

H1: *Acquirers gain more from the acquisition of targets that have been subjected to shareholders' activism than from the acquisition of other targets.*

As indicated by some earlier studies (for example, Butu (2013)), shareholders benefit more from aggressive forms of activism. Therefore, given that acquirers are willing to acquire activist targets because of activists' ability to improve the quality of the firm, shareholders of activist should be able to sell their firm at a higher price to an acquirer. This leads to the second testable hypothesis:

H2: *Compared to other targets, firms that are subjected to activism secure a higher takeover premium from their acquirers.*

It is also known that in any takeover deal, the method of payment signals the quality of the deal. For instance, acquirers of private targets gain more in stock deals than in cash deals (Faccio and Masulis, 2005). This is because the willingness of a single or a handful of target owner(s) to continue to hold stakes in merged firms is a signal of a value enhancing deal. Similarly, if activists are confident that their activism has improved the quality of their targets and that the value created is sustainable in the long run, they are more likely to be prepared to accept stocks and/or other securities in the merged firm and continue to be involved in the merged firm. Otherwise, activists would only accept cash and walk away from the firm, that is, they would prefer to 'cash and run.' Furthermore, the willingness of acquirers to accept activists' stakes in the merged firm sends a positive signal about the quality of the management of these acquiring firms. As a result, the market is likely to react more favourably to non-cash deals compared to cash only deals where acquiring firms effectively 'buys out' the activists. This leads to the third testable hypothesis:

H3: *Acquirers of targets that have activists gain more in non-cash deals than in cash deals.*

Existing studies discussed in earlier sections have suggested that hedge fund activists can add value to firms. However, as mentioned before, studies that dwell on the value implications of other investors' activism argue that such activists (for example, large pension funds and mutual funds) can make very little positive impact, if any, on company management and value creation.

For instance, Wahal (1996) reports no evidence of any effect of pension funds' activism on the long-term stock price and accounting performance of firms. Similarly, (Black, (1998),

p.459) argues that "…the currently available evidence, taken as a whole, is consistent with the proposition that the institutions achieve the effects on the firm performance that one might expect from this level of effort – namely, not much."

Karpoff (2001) suggests that shareholder activism can make a small change in target firms' governance structures. Its impact, however, remains negligible on the stock value and earnings of the firm.

After reviewing the literature on the evidence of institutional investors' activities in corporate governance, Romano (2001) suggests that the shareholders' activism has little or no effect on targeted firms' performance. She recommends that institutions should re-assess their activism agenda and use the resources more effectively.

Kahan and Rock (2007) highlight the difference between activism by hedge funds and other institutional investors. They attribute the differences to the incentive structures of hedge fund managers and the diversification strategy pursued by traditional institutional investors that is difficult to combine with strategic activism.

Klein and Zur (2009) study confrontational activism campaigns by activist hedge funds and other private investors. They find that activist hedge funds target more profitable firms than other activists and while activist hedge funds are found to have addressed the cash flow agency costs, other activists are found to have changed the targets' investment strategies. They suggest that activist hedge funds adopt a different approach compared to other private activists and that confrontational entrepreneurial activism may represent a new breed of shareholder activism.

Cumming and Dai (2010) argue that regulations tend to restrict the performance of hedge funds and suggest that future research investigate the interaction between the regulation governing hedge funds and their activism.

Overall, the evidence suggests a significant difference on the effectiveness of activism by hedge funds and other shareholder activists. Consequently, in takeover deals, both the acquirers as well as the target firms should benefit more from the deals that involve targets subjected to activism by hedge funds than by other shareholder activists.

Furthermore, it could be argued that, compared to a single activist, multiple activists working together (for example, wolf pack argument of Briggs (2007)) could influence the governance and strategy of the firm more effectively. Consequently, the improvement in the quality of the firm that have multiple activists should be better than that of firm with a single activist.

Alternatively, it could also be possible that the experience of activists adds more value to the outcome of activism. Consequently, the quality of firms that have serial (experienced) activists can be expected to be superior to the quality of the firms that have casual effects.

Thus, the type of activist could play a major role in influencing the gains to acquiring firms because of the significant difference on the effectiveness of multiple activists and serial activists compared to a single activists and casual activists respectively. This leads to the final testable hypothesis:

H4a: *Acquirers' gains from takeover dals is dependent on the type of activists*

H4b: *The takeover premium secured by target firms depends on the type of activist.*

3.3.Data and Methodology

3.3.1. Sample Construction

The sample for the analysis of Chapter 3 is constructed using two databases: the hand-collected central shareholder activism database and the Thomson One Mergers and Acquisitions database.

A central shareholder activism database is constructed using Schedule 13D filings that are available from the Security and Exchange Commission (SEC)'s EDGAR database. Every institutional money manager, including activist hedge funds must file a SC 13D document with the SEC when he/she attains 5% or more in any class of a company's securities. These documents have to be filed within 10 days following the purchase of the company's securities. The SC 13D filings outline the size of the purchase and summarizes the investors' intentions. Since 2000, it has been common for an activist to attach a letter to the target firm's management or board within their SC 13D filing (Greenwood and Schor, 2009). The most important section of the SC 13D filing for the purpose of empirical analysis is the "Item 4: Purpose of Transaction" section, which highlights the intentions of the activist. An activist can have various intentions such as "share repurchases," "sale of target," "spinoff of a target's business," "board representation," or simply "investment purposes."

The EDGAR database has recorded 13D filings for most public firms since 1994. The central shareholder activism database (CSAD), after hand collecting all initial SC 13D filings by 878 activists, consists of 6,380 campaigns from 1994 to 2016. The database starts from 1994 because this is the year when the 13D filings are first available in the SEC's EDGAR database. While the database for this thesis ends in 2016, since I conduct a long-term analysis as well, the central shareholder activism database will be continuously updated as and when information about new activists is obtained. Till date, this activist database is the most comprehensive database available and is therefore, a useful contribution to the research on shareholder activism in general, and hedge fund activism in particular. The CSAD is dominated by hedge fund activists, thereby indicating the surge in the prominence of hedge fund activism, especially since the financial crisis. The CSAD consists of 4,102 campaigns by 292 activist hedge funds and 2,278 campaigns by 586 other shareholder activists. Other shareholders activists are classified as follows: Financial institutions (defined as broker-

dealers, commercial banks, savings banks etc.), Private Equity Companies (defined as private equity investors or funds), Investment Managers (defined as managers of private clients' assets portfolios, including financial advisors and consultants), Investment Companies (defined as closed-end funds and open-end mutual funds), Pensions Funds (defined as retirement systems such as CalPERS), Industrial Owners (defined as nonfinancial corporations; typically such firms own an equity stake in the target firm), Individual Investors (defined as a filer who is a single individual, most often a shareholder of the target company), Shareholder committee (more than one individual registrant is specified in the filing, which often occurs under a name of the form "TargetCompany Shareholder Committee." Shareholder committees typically consist of several individual shareholders and may include company directors. It is not unusual to observe a committee co-operating with hedge funds, investment companies and managers, or workers unions), Workers unions (defined as union filers), and Unknown (defined as categories for which it is not possible to identify the type of filer) (Norli,Ostergaard and Schindele, 2015).

For the analysis of Chapter 3, activist campaigns whose outcomes are takeovers has to be identified. Following the methodology of Greenwood and Schor (2009), targets of activist-initiated acquisitions are identified as those targets that are acquired within 18 months of the activist's campaign. Upon merging the CSAD with the Thomson One Mergers and Acquisitions database, after applying the methodology of Greenwood and Schor (2009), I obtain 316 M&A deals [4]subsequent to campaigns by 167 activists from 1994 to 2014. Table 3.1 (Panel A) shows that activist-initiated deals start to increase from 1994 (two deals) and reach their peak in 2014 (25 deals). However, there is no particular pattern to this change.

[4] The deals analysed in this chapter only involve those where both the acquirers and targets are public.

Table 3.1 (Panel B) shows that 192 targets involve activist hedge funds while 169 deals involve other activists[5].

(Insert Table 3.1 about here)

To examine the implications of activists' targets on acquirers' gains (and the premium received by target firm shareholders), I compare the gains (and premium) from acquisitions of such targets against the gains from acquiring targets that do not have activists. A matching sample is constructed, to create a sample of deals that are not activist driven, based on acquirers' industry, size, and market-to-book value ratios (that is, I follow the control firm approach of benchmarking). More specifically, in each industry and calendar year, acquirers are categorized into quintiles based on their market values. In each size quintile, acquirers are sorted on their market-to-book value ratios. Deals involving acquirers with market-to-book value ratios close to those of acquirers of targets involving activists are selected as the matching sample. 359 matching deals are identified that are not driven by activists.

Data on stock returns and financial (accounting) data, used to analyse short-term gains and long-term performance are obtained from CRSP and Compustat respectively.

3.3.2. Methodology

3.3.2.1. Measuring Announcement Period Gains

The announcement period excess returns of acquirers' shareholders are estimated using the market-adjusted model[6] as in equation (3.1):

$$AR_{i,t} = R_{i,t} - R_{m,t} \qquad (3.1)$$

[5] The number of deals by activist groups is greater than the number of deals in total because some deals involve multiple activists.

[6] I also estimate excess returns using the market model and the cumulative abnormal returns for the 3-day [-1, +1] window. In the market model, the parameters (alpha and beta) are estimated over the pre-announcement [-365, -28 days] period. In the interest of brevity, the estimates based on the market-adjusted 5-day event window and only discuss other results if they are qualitatively different.

Where, $AR_{i,t}$ is the abnormal return of company *i* (acquirer or target) on day t; $R_{i,t}$ is the return of company *i* on day *t*, and $R_{m,t}$ is the market return on day *t* (measured by CRSP value-weighted index return).

The cumulative abnormal return (CAR) is the sum of the abnormal returns over the 5-days (-2 to +2) surrounding the day of announcement of the deal as in equation (3.2):

$$CAR_i = \sum_{t=-2}^{t=+2} AR_{i,t} \qquad (3.2)$$

The excess returns of the shareholders of target companies are measured in the same way as the gains to the acquirers, that is, the CAR for the 5-day event window.

Gains to target firm shareholders are also measured using a bid premium, defined as the difference between the offer price and the target's stock price four weeks before the announcement divided by the latter as in equation (3.3):

$$Bid\ premium = \frac{OP - P_{(t-28)}}{P_{(t-28)}} \qquad (3.3)$$

Where, OP is the price offered by the acquirer to the target firm and P_{t-28} is the price of the target 28 days before the announcement of the deal. Unlike the 5-day event period CAR, the bid premium measured using equation (3.3), is expected to capture the relatively long-term movement in the value of the target, including the effects of any possible rumours of the takeover deal. Following the methodologies of Golubov, Petmezas and Travlos (2012) and Officer (2003), the bid premium is winsorized if the value is outside the range of zero and two[7].

[7] Robustness tests were also conducted using the original values of bid premiums. The results were found to be qualitatively similar.

3.3.2.2.Measuring Long-term performance of acquirers

Buy-and-hold abnormal returns (BHAR) over 24 months[8] are used to measure the long-term (post-deal announcement) performance of acquiring firms of both activist targets and the non-activist targets. As the returns of the portfolio of non-activist targets serve as benchmark returns, the difference between the gains of the two sets of acquirers serves as a measure of buy-and-hold abnormal returns (BHAR).

The buy-and-hold abnormal returns are computed using the market-adjusted model, as shown in equation (3.4) (Cai,Liu and Mase, 2008):

$$BHAR_{iT} = \left[\prod_{t=1}^{T}(1 + r_{it})\right] - [\prod_{t=1}^{T}(1 + r_{mt})] \qquad (3.4)$$

The mean BHAR over a period T is estimated as shown in equation (3.5):

$$\overline{BHAR_T} = \frac{1}{n}\sum_{i=1}^{n} BHAR_{iT} \qquad (3.5)$$

3.3.2.3.Univariate Analysis

The announcement period gains of acquirers and targets (CAR), bid premium received by targets and the acquirers' long-term performance (BHAR) are analysed using the t-test (two sided) to assess their statistical significance.

The announcement period CARs and the bid premium received by the sample and the matched firms are compared using a two-sample t-test. Similarly, the long-term performances of sample and matched acquirers are also compared using a two-sample t-test.

[8] BHAR is also estimated over 12 and 36 months. In the interest of brevity, only the estimates based on 24-month buy-and-hold returns (BHAR24) are reported and other results are discussed only if they are qualitatively different.

Where appropriate, Wilcoxon signed-rank test is used to test the significance of median gains and the Wilcoxon rank-sum test is used to compare the median gains/premium of two sets of samples (e.g. gains from the activist sample and the matched sample).

3.3.2.4.Multivariate Analysis

Based on the methodology of Moeller, Schlingemann and Stulz (2004), the impact of activist-initiated acquisitions on the acquirers' announcement gains (CAR_i) are examined after controlling for the effects of other factors that are known to affect the acquirers' gain, as in equation (3.6):

$$CAR_i = \alpha_0 + \alpha_1 Activist + \alpha_2 Firm_i + \alpha_3 Deal_i + f_t + f_{ind} + \varepsilon_i \qquad (3.6)$$

The key explanatory factor of interest in equation (3.4) is the dummy variable that represents the presence of activists. *Activist* takes the value of one if the takeover target was subjected to activism and zero otherwise. The vectors '*Firm*' and '*Deal*' represent the firm and deal specific variables as listed in Appendix 3A. The model also accounts for year (f_t) and industry effects (f_{ind}).

Next, the impact of activism on takeover premium is examined after controlling for possible effects of firm and deal specific factors, as well as year and industry effects, as in equation (3.8):

$$Premium_i = \alpha_0 + \alpha_1 Activist + \alpha_2 Firm_i + \alpha_3 Deal_i + f_t + f_{ind} + \varepsilon_i \qquad (3.7)$$

Activist dummy is once again the key explanatory variable in equation (3.8).

Equations (3.6) and (3.7) are estimated using OLS.

The impact of activism on choice of the method of payment is examined using two alternative definitions of dependent variable, viz. by estimating the probability of cash payment (equation 3.8), and the percentage of cash payment (equation 3.9):

$$Probability\ of\ Cash\ Payment = \alpha_0 + \alpha_1 Activist + \alpha_2 Firm_i + \alpha_3 Deal_i + f_t + f_{ind} + \varepsilon_i \quad (3.8)$$

$$Percentage\ of\ Cash\ Payment = \alpha_0 + \alpha_1 Activist + \alpha_2 Firm_i + \alpha_3 Deal_i + f_t + f_{ind} + \varepsilon_i \quad (3.9)$$

The dependent variable in equation (3.8) is a *Cash* dummy that equals one if the deal is 100% paid in cash, and zero otherwise. The dependent variable in equation (3.9) is defined as the percentage of consideration paid in cash (transaction value paid in cash over total transaction value). Equation (3.8) is estimated using the Probit model while equation (3.9) is estimated using OLS.

Activist dummy is the key variable of interest in both equation (3.8) and equation (3.9). $Firm_i$ is a vector of characteristics of acquirer *i* at the end of fiscal year prior to deal announcement, and $Deal_i$ is a vector of characteristics pertinent to deal *i*. The firm and deal characteristics are defined in Appendix 3A. Year fixed effects (f_t) and industry fixed effects (f_{ind}) are controlled for in both equation (3.8) and equation (3.9).

All continuous variables, with the exception of bid premium, in the aforementioned regressions, are winsorized at the 2% and 98% levels. The results remain qualitatively similar even when original values are used, when the data is winsorized at the 1% and 99% levels, and at the 5% and 95% levels.

3.4.Results and Analysis

3.4.1. Summary Statistics

Table 3.2 provides summary statistics of key features of acquirers (Panel A) and targets (Panel B) of both activist driven deals and non-activist driven deals (see Appendix 3A for their definition).

The first key observation is the lack of significant differences in mean/median values of the key features of both acquirers and targets in the two categories of deals, which confirms their suitability for comparison purposes.

In line with previous literature, targets are found to be much smaller than acquirers in size and acquirers are found to have higher growth opportunities (M/B ratios) than the targets.

Activist targets are found to have higher stock price growth in the run-up to the announcement of the deal compared to non-activist targets, which suggests that up to 18 months' gap between the deal announcement and the activist campaign announcement provides enough opportunity for activists to improve the performance of their targets, which results in an increase in the stock price of the target firms.

Analysis of deal characteristics shows that relatively higher proportions of the deals involving activists are settled in cash compared to non-activist deals (Panel C). This is plausible because activists may prefer cash rather than stocks or other securities in merged firms for primarily two reasons: (1) 'cash and run' because of their lack of confidence in the long-term quality of the deal, including the sustainability of the improvement in the quality of targets they have achieved through activist campaigns, and (b) to move their funds to another superior investment opportunity (that is, the exit strategy).

(Insert Table 3.2 about here)

3.4.2. Impact of Activism on Announcement Gains to Acquirers

As mentioned earlier, existing studies have indicated that activist targets are likely to have superior financial and business strategies. This implies that acquisitions of activist targets should benefit acquirers more compared to the acquisitions of non-activist targets, which further implies that acquirers of activist targets will be rewarded more by the market compared to acquirers of non-activist targets.

On the other hand, activist targets are more likely to be attractive to many potential bidders because of their superior/reformed quality (at least perceived). Therefore, to ward off competition, potential acquirers of activist targets are likely to offer higher premiums, possibly close or equal to the synergy gains. As a result, acquirers may not gain on the announcement of targets that are subjected to activism. It is possible for acquirers to end up paying more than the synergy value and suffer a lag on the announcement of the deal when judged, ex post. However, ex ante, no rational manager is expected to pay a premium higher than the synergy value of the deal, and therefore, the expected lower limit of the gain is zero.

Hence, it becomes imperative to examine whether acquisitions of activists' targets generate higher returns to acquirers. This section compares the announcement period gains of acquirers participating in activist-driven acquisitions to the announcement period gains of acquirers of non-activist targets.

Table 3.3 (Panel A) provides a comparison of the 5-day market-adjusted CARs (announcement period gains) of the activists' sample and the matching sample. The estimates show that the acquirers of activist targets gain a positive and significant return (0.78%) on the announcement of the deal while the acquirers of non-activist targets (matching sample) suffer a significant loss (-0.69%). The difference between their gains (1.6%) is also statistically significant, thereby confirming that the acquisition of activists' targets is superior to the acquisition of non-activist targets. This is possible because activists have already improved the governance and business strategies of the targets before making the firm available for acquisition[9]. This result also supports the finding of Boyson,Gantchev and Shivdasani (2017), who find that third-party bids for activist targets experience higher returns.

[9] The estimates based on a 3-day even period window and market model are qualitatively similar.

Overall, the results support the first testable hypothesis (H1), that is, *"Acquirers gain more from the acquisition of targets that have been subjected to shareholders' activism than from the acquisition of other targets,"* and suggest that acquiring firms' shareholders are better off by acquiring targets that have been subjected to activism.

(Insert Table 3.3 about here)

Next, to ensure that it is the impact of activism and no other factors that influence the superior performance of acquirers of activist targets, equation (3.4) is estimated to control for the implications of other factors that are known to affect acquirers' gains.

Table 3.4 provides the results and they reveal a positive and significant role of the '*Activist'* dummy on acquirers' announcement period gains in all four specifications. Therefore, when combined with the univariate analysis, the picture becomes clear, that is, acquiring a target that has an activist can generate higher returns to the acquirer in comparison to acquiring a target that has no activist.

In addition to activism, other factors that affect the acquirers' announcement period gains (CARs) are the size of the acquirer (i.e. Ln (MV)) and the relative size of the deal, with both factors having an inverse relationship with the gains. This suggests that larger acquirers and relatively larger deals lead to a decline in announcement period returns for acquirers.

Overall, I provide the first evidence of positive impact of shareholder activism. Activists create value to acquiring firm shareholders in addition to creating value for their targets. More specifically, after controlling for the firm and deal specific factors, activist driven acquisitions improve acquirers' market value by about 2% within a 5-day announcement period window (Table 3.4, specification 4), which translates to about $334 million (2% x $16,696 million average deal size) gain for an average acquirer of activist targets. The evidence from multivariate analysis also supports the first hypothesis and confirms that

potential acquirers can benefit by identifying targets that have been subjected to shareholder activism, including hedge fund activism. This result also contributes towards understanding the positive spillover effects of shareholder activism on non-targets. Activist shareholders are found to have had an indirect positive impact on acquiring firms participating in acquisitions undertaken by activists.

(Insert Table 3.4. about here)

3.4.3. Impact of Deal Payment on Acquirers' Gains

The existing literature on mergers and acquisitions suggests an existing relationship between the performance of acquiring firms and the method of deal payment. As noted earlier, the signal conveyed by the willingness of activists to maintain a stake in the merged firm should be much more favourable compared to that of 'cash and run.' Therefore, activist driven deals where the method of payment is not cash is expected to generate higher announcement period gains to acquirers than the activist driven deals where the method of payment is cash only.

To examine this issue, equation (3.4) is estimated by splitting the sample deals into two categories, namely (a) cash only deals, and (b) non-cash deals (that is, all deals excluding cash only deals). Announcement period gains of acquirers (5-days) are then regressed against a set of explanatory variables. The results are reported in Table 3.5.

As evidenced from Table 3.5, the coefficients of the activist dummy are statistically insignificant, across all four specifications (specifications 1-4), in cash only deals. However, in non-cash deals, the coefficient of the activist dummy is found to be positive and significant across all four specifications (specifications 5-8). These findings suggest that non-cash (primarily stocks) payment helps generate higher returns to acquirers. The evidence that acquirers gain more in non-cash deals (stocks) is consistent with the experience of the acquirers of private (unlisted) targets, in which the acceptance of stocks by the shareholders

of the target signals a certification of the quality of the deal to the market. The signal is meaningful because the activists, who are likely to have access to experts for rigorous due diligence and substantial post-merger holdings, are willing to accept securities (for example, stocks) of the acquirer. This evidence supports the third hypothesis (H3), that is, "*Acquirers of targets that have activists gain more in non-cash deals than in cash deals."*

Furthermore, strategically, from the perspective of acquirers' shareholders, it appears more meaningful to bid for targets that have activists who are willing to maintain their stake in the merged firm. This finding contributes to the practical implications of activist-driven acquisitions, especially from the perspective of an acquiring firm.

(Insert Table 3.5 about here)

3.4.4. Impact of Activism on Takeover Premium

Existing literature on mergers and acquisitions unanimously suggests that targets' shareholders achieve significant positive returns on the announcement of a takeover bid. Results from this chapter, reported in Table 3.6 (panel A), also confirm this and show that targets gain around 20% returns on the announcement of the deal.

However, the more pertinent question is whether the shareholders of activist targets gain more than the shareholders of non-activist targets. A comparative analysis of gains to the shareholders of activist targets and non-activist targets does not reveal any significant difference (Table 3.6, Panel A). This is a very plausible result since the market may have appropriately valued the activist target in response to the news of activism (SC 13D filing) rather than wait until the firm is taken over.

An alternative measure of bid premium received by the target firm shareholders (deal price relative to the market price of the target 4 weeks prior to the announcement of the deal) is also considered. Estimates based on this measure are presented in Table 3.6 (panel B).

The bid premium estimates reconfirm that there is no difference in the bid premium received by the shareholders of activist targets and non-activist targets. Thus, contrary to the suggestion of some earlier studies, these results suggest that shareholders of firms that are subjected to investors' activism do not need to be acquirers to realize the value gained from activism.

(Insert Table 3.6 about here)

The implications of activism on gains to target firm shareholders is also assessed in a multivariate framework that controls for the effects of other firm and deal specific characteristics. This is carried out by regressing the target firms' 5-day announcement period returns against a set of explanatory variables and the results were reported in Table 3.7. The key finding is that the coefficient of the activist dummy remains insignificant, thereby indicating that the target firms' returns do not depend on investors' activism. This result is conflicting with the existing literature because unlike previous studies, I have compared the returns of targets of activist-initiated acquisitions with those targets of acquisitions not initiated by activists. While Table 3.6 (Panel A) suggests that targets of activists do gain around the time of the deal announcement[10], they do not outperform[11] the targets of non-activists who are acquired.

While critics can use this lack of significant difference in the returns secured by the shareholders of activist targets and non-activist targets to question the ability of activism to add value to target firms, this is not the case. On the contrary, it is very much likely that the value created by activist investors was already reflected in a target's market value before the announcement of the deals. As mentioned earlier, Greenwood and Schor (2009) attribute the positive abnormal returns around the announcement date of the activist campaign to the

[10] Consistent with previous studies
[11] Previous studies do not test this, hence the conflicting result.

ability of the activist to force the target to be acquired. If the market already anticipates the sale of the target around the time that an activist announces his/her stake, then it is very much possible that the market reaction would account for the takeover around the time of activism announcement rather than wait for the deal announcement.

Overall, the evidence from this section rejects the second hypothesis (H2), that is, "*Compared to other targets, firms that are subjected to activism secure a higher takeover premium from their acquirers."*

(Insert Table 3.7 about here)

3.4.5. Do Activist Targets Prefer Cash Deals?

In the previous section, it is found that the gains to acquiring firms is attributed to non-cash deals, where the activist retains his/her stake in the merged firm. Nevertheless, what about the target shareholders? Do shareholders of activist targets prefer to be involved in the merged firm, or do they simply prefer to 'cash and run?'

The results reported in Table 3.7 reveal a significant positive relation between the announcement period returns (CAR) secured by targets' shareholders and the variable representing cash payment. In other words, target shareholders who sell their stocks for cash earn significantly higher returns.

This positive evidence leads to an interesting question: is there any significant difference in the preferences of activist and non-activist target firms' shareholders? To examine this, the sample is split into two groups – cash only deals and non-cash deals, and two separate estimations were run.

The choice of payment methods (cash only vs. non-cash) are regressed against a vector of explanatory variables using Probit (equation 7) and OLS (equation 8) methods. The results are reported in Table 3.8.

From Table 3.8, it becomes evident that activist targets prefer cash only deals compared to non-cash deals since the coefficients of the 'activist' dummy is positive and significant across all specifications. A preference of cash-only deals for activists looks very plausible since activists would prefer to cash in their efforts and move on to other investments that may have a higher return potential. Furthermore, the choice of cash only can also be considered a rational decision for other investors because they receive higher premiums in cash only deals than in other deals (Table 3.8).

(Insert Table 3.8 about here)

3.4.6. Types of activists and gains from acquisitions

As discussed earlier, the type of activist could play a major influence on the gains to acquirers participating in activist-initiated acquisitions. This section discusses three such cases (hedge fund activists vs. other shareholder activists, multiple activist vs. single activist & serial activist vs. casual activist).

3.4.6.1.Hedge fund activists vs. Other shareholder activists

As discussed in Section 3.2, numerous studies show that activist hedge funds are more effective compared to other shareholder activists. On balance, the literature on shareholder activism shows differences in the effectiveness of activism led by activist hedge funds and other shareholder activists.

To examine whether the gains to acquirers and the premium received by target firm shareholders are also dependent on the type of activist, the sample of target firms is split into

two groups, namely: (a) targets of hedge fund activists, and (b) targets of other shareholder activists.

The announcement period gains and long-term performance of acquirers and target premium of both samples (targets of hedge fund activists vs. targets of other shareholder activists) are compared. The results are reported in Panel A of Table 3.9.

From Table 3.9, it can be deduced that acquirers participating in acquisitions involving hedge fund activists generate higher announcement period gains (CAR) compared to acquirers participating in acquisitions involving other shareholder activists. However, the difference in the announcement period gains of the two groups of deals by the type of activist (hedge fund activists vs. other shareholder activists) is not statistically significant.

A similar pattern is observed in the long-term performance of acquirers (BHAR24). Contrary to the evidence documented in the literature that activist hedge funds are superior, the evidence in this section suggests no significant difference in the announcement period gains of target firms (Target CAR).

Therefore, while activist hedge funds create value to acquirer shareholders, the evidence suggests that they are not more efficient value-creators compared to other shareholder activists. In other words, while there is sufficient evidence of hedge fund activists having a positive spillover effect on non-targets, the lack of statistical significance suggests that the evidence is not strong enough to conclude that activist hedge funds are more superior to other shareholder activists. This finding contributes to understanding the efficiency of hedge fund activists compared to other shareholder activists.

3.4.6.2.Multiple activists vs. Single activist

The gains to acquirers as well as to the shareholders of targets that are subjected to activism by multiple activists against those of targets that have only one activist are compared the results are presented in Panel B of Table 3.9.

The estimates show that on the announcement of the deals, the acquirers suffer some losses (although statistically insignificant) from the acquisition of targets with multiple activists while the acquirers of targets with a single activist gain some positive returns. In statistical terms, neither the losses/gains of individual sub-groups not the differences are significant. However, the differences are economically meaningful. If the relatively lower acquirers' returns from deals with multiple activists is due to over-payment in response to combined (superior) bargaining power of multiple activists, then the gains to such target firm shareholders should be higher.

(Insert Table 3.9 about here)

However, the estimates from Panel B of Table 3.9 show that the shareholders of targets that have multiple activists do not gain more than the shareholders of targets with a single activist. Similarly, there is no significant difference in the long-term performance of acquirers of targets that have multiple activists compared to the acquirers of targets that have a single activist. Once again, the balance of evidence suggests that the gains to acquirers of targets that have been subjected to activism and target firms' shareholders remain independent of the combined efforts of multiple activists *versus* to those of a single activist.

3.4.6.3.Serial vs. Casual Activist

To examine the possible effect of activism experience on the gains to acquirers and targets from M&A deals, the sample is split by prior experience of activists. Activists are categorized as serial if they perform five or more activist campaigns over a three-year period prior to the announcement of the deal. Other activists are categorized as casual. A comparative analysis

of gains to acquirers as well as targets from deals involving serial and casual acquirers is presented in Panel C of Table 3.9.

The pattern of estimates shows that on the announcement of deals, the acquirers of targets with serial activists gain slightly more than the acquirers of targets that have casual activists. However, the differences are statistically insignificant. Neither the gains to target firm shareholders are significantly dependent on activists' experience. The lack of significant difference in the long-term performance of acquirers by the type of activists also confirms that serial activists cannot add more value than the casual activists. It is, however, noteworthy that in economic terms, both the acquirers as well as target firm shareholders benefit more from the deals that involved experienced activists. It is also possible that the pre-bid market price of targets already reflects the additional quality added by serial activists and hence no further differences in gains are achievable by the acquirers or the targets.

Overall, the discussion above suggests that the type of activists (hedge funds vs. others, multiple vs. single, and serial vs. casual) does not influence the outcome of M&A. In other words, the fourth/final set of propositions that is, (a) *acquirers' gains from takeover deals is dependent on the type of activist* (H4a), and "*the takeover premium secured by target firms depends on the type of the activist* (H4b) are not supported by the results.

This finding contributes to understanding whether value-creation is impacted by the type of activist campaign.

3.5.Conclusions

Shareholder activism, in general, and hedge fund activism, in particular, is known to be a value-creating machine, as evidenced from existing literature. Greenwood and Schor (2009) attributed such excess returns (additional value) to the ability of the activists to force the firm

to be acquired. Becht *et al.* (2017) also show that takeovers are the most popular outcome of activist engagements.

This chapter examines whether firms that acquire targets of shareholder activism can outperform acquirers of non-activist targets, using a sample of US domestic mergers and acquisitions subsequent to activist campaigns over the period 1994-2014. This sample is constructed using a hand-collected comprehensive central shareholder activism database (CSAD) and Thomson One Banker mergers and acquisitions database. Several findings emerge.

First, on the announcement of takeover deals, the acquirers of activist targets outperform acquirers of non-activist targets that do not have any activist. After controlling for the firm and deal specific characteristics, acquirers of activist targets outperform activists of non-activist targets by about 2% on the announcement of the takeover deal. This return translates into $334 million gain to the average acquirer. In other words, there is the first glimpse of evidence that shareholder activism has a positive indirect impact on firms that are not targets.

In the long-term, however, the performance of acquirers is not significantly dependent on the presence (or lack of) activist – the acquirers of activists' targets gain as much as the acquirers of other targets.

Second, the gains to target firm shareholders remain independent of activism. Unlike the suggestions of previous studies, this evidence implies that there is no need to sell the target to a bidder to realize the gains of activism. It is possible that the market price of firms that are subjected to activism already reflects the enhanced quality of the firm. This evidence, combined with the evidence from a comparative analysis of an alternative measure of bid premium, suggests that acquirers do not overpay to acquire activist targets. On the contrary, they benefit more by acquiring such targets compared to targets that do not have activists.

Third, the superior gains enjoyed by the acquirers of activist targets is largely driven by non-cash deals where the activists continue to hold their stakes in merged firms.

Finally, neither the acquirers nor the target firm shareholders benefit more from the deals that involve activist hedge funds compared to other shareholder activists. Nor do acquiring firms benefit more when there are multiple activists compared to a single activist. Similarly, the experience of activists does not seem to make any material difference in the gains to acquirers or targets. Therefore, the value of shareholder activism, especially in the gains from takeover deals, is not dependent on the type of activists. There is, however, some evidence to suggest that activist hedge funds benefit acquiring firms by demanding a lower premium compared to other shareholder activists, but given the weak significance, the evidence is not concrete.

Overall, the findings of this chapter contribute to the existing literature on activism and mergers. The findings suggest that acquirers can benefit more by taking over targets that are subjected to shareholder activism compared to the acquisitions of targets that have no activists. By implication, from the perspective of target firms' shareholders, it is worthwhile improving the quality of the firm before it is sold. Similarly, acquirers are better off by acquiring targets that have already gone through the improvement process and the benefit to acquirers is even higher when the activists are willing to retain their stakes in the merged firm by accepting a non-cash settlement.

While this chapter provides a glimpse of the long-term game plan of shareholder activism since the outperformance is mainly observed in non-cash deals, where the activist maintained his/her stake in the merged firms, it also questions the value creation in activist targets through takeovers. This is mainly because although activist targets receive a 20% premium on the announcement deal, the difference between activist premium and "non-activist"

premium is insignificant. In addition, this chapter does not explain the scenario when the target firm is too large to be acquired or regulatory hurdles could affect the acquisition of the target. Furthermore, the aforementioned long-term game plan of activists is not convincing enough to indicate that hedge fund activists are beneficial to the economy. There is also no evidence of hedge fund activists being more efficient compared to other shareholder activists, as observed by some studies.

These questions are answered in Chapter 4, which explores the next popular activist mechanism, corporate divestitures. In Chapter 4, more convincing evidence is observed for the long-term value creating ability of hedge fund activists and the picture of hedge fund activists being beneficial to the economy becomes a lot clearer.

CHAPTER 4 – HEDGE FUND ACTIVISM & CORPORATE DIVESTITURES

4.1.Introduction

Chapter 3 analyses one of the most popular activist campaigns, corporate takeovers, and their impact on acquiring firms. While there is a glimpse of evidence indicating that activists have a long-term game plan while undertaking campaigns, the evidence is insufficient to understand whether hedge fund activists are beneficial to the economy. Moreover, Chapter 3 does not provide enough evidence of the superiority of hedge fund activists over other activists, as indicated by some studies.

This chapter tackles the aforementioned issues and contributes towards understanding the value-creation by hedge fund activists, by examining yet another popular value-creating mechanism: corporate divestitures. Corporate divestiture refers to a firm's strategic action to remove some of the group's assets under its current business portfolio. Corporate divestitures primarily include two types: spinoffs and selloffs. Spinoffs are defined as a process whereby "a certain asset of a firm is split off from the parent firm into a separately publicly traded firm," (Prezas and Simonyan (2015), p.84). Selloffs are defined as a process whereby "a certain asset of the divesting firm is sold off for cash or securities to another firm or entity," (Prezas and Simonyan (2015, p.84).

In recent times, divestitures have become increasingly popular among activists, and in particular, with hedge fund activists. According to Deloitte (2015), the total announced value of divestitures in 2015 Q4 alone was $409 billion, and a total of 12,701 divestitures were completed in 2015, accounting for 39% of worldwide M&A volume.

Both spinoffs and selloffs have different implications to the target firms, and subsequently to hedge fund activists. As a result, the motivation for hedge fund activists to demand either

spinoffs or selloffs are different. Prezas and Simonyan (2015), in their paper, highlight the various criteria and scenarios used by firms to choose between spinoffs and selloffs. For instance, they find that undervalued firms are more likely to undertake spinoffs whereas overvalued firms are more likely to undertake selloffs. Furthermore, they find that firms prefer spinoffs during periods of investor optimism and firms preferred selloffs during periods of investor pessimism. Hedge fund activists are known for their extensive due diligence ((Becht *et al.*, 2010); (Becht,Franks and Grant, 2010)) and their due diligence on the market valuation of their targets and on the mood of the market could influence their demand for a spinoff or a selloff.

Divestitures, especially spinoffs, are also greatly influential in helping companies meet their growth- and capital-efficiency objectives. Emrick *et al.* (2017) document that in 2016, global spinoff volume alone reached $117 billion. They also find that shareholder activists, including activist hedge funds, are among the major driving force behind this rise in divestiture volume – with almost 20% of the companies that announced spinoffs in the past five years being targets of some form of shareholder activism.

Montgomery,Thomas and Kamath (1984) find that divestitures linked to corporate or business level strategies are valued positively by the market. Since activist hedge funds demand for changes in corporate or business level strategies, it is likely that a demand for a divestiture will be viewed as a positive signal for the market. Evidence suggests that this is indeed the case as seen from the market reaction to hedge fund activist, Third Point's efforts to spinoff Honeywell's aerospace unit:

"*Shares of Honeywell surged Friday following news that activist investor Dan Loeb's Third Point is pushing for the conglomerate to spin off its aerospace unit.*

"Third Point believes that a separation of the Aerospace unit via a spinoff transaction would result in a sustained increase in shareholder value in excess of $20 billion," a letter from the fund said. "Spinning off Aerospace would transform Honeywell into an industrial growth company with a focus on automation and productivity."" (Daniels and Hogan, 2017).

Given the surge in hedge fund activism and the rise in popularity of divestiture among activists, the main objective of this chapter is to examine whether hedge fund activist-initiated divestitures create long-term value. More specifically, this chapter examines the following research questions: (1) Are divestitures a new value-creation channel for hedge fund activists? (2) Do the goals pursued by such activists pertain merely to takeovers or do they instead involve long-term value?

By examining a unique and hand-collected sample of activist-initiated divestitures from 1994 to 2016, the investigation of this chapter aims to contribute by providing a clearer picture, based on the foundation built in Chapter 3, on the intention of the hedge fund activists: improved long-term performance or a path to the sale of their target. Additional analysis is performed to understand the short-term impact of activist-initiated divestitures and the divestiture preference of hedge fund activists.

Theories suggest that activism may affect corporate divestitures through several channels. As mentioned earlier, Greenwood and Schor (2009) suggest the takeover channel. Accordingly, this would imply that targets of hedge fund activist-initiated divestitures to be acquired post the divestitures, especially since corporate divestitures (especially spinoffs) increase the probability of takeovers (Chemmanur and Yan, 2004).

Alternatively, Desai and Jain (1999) and John and Ofek (1995) propose the resources channel. More specifically, they propose the focus hypothesis, which states that eliminating

negative synergies between divested and remaining assets should lead to better performance after the divestiture.

If the focus hypothesis holds, tangible improvements in firm value (both in terms of market returns and with respect to operating performance) are expected, through improved managerial focus arising as a result of hedge fund activists' interventionist tactics (Becht *et al.*, 2017).

Finally, there is the corporate governance channel proposed by Brave *et al.* (2008) and Boyson and Mooradian (2011), who suggest that activism should effectively improve the corporate governance of the target firm. If this is true, the result is a positive stock market reaction and improved target performance in the wake of the completion of hedge fund activist-initiated divestitures.

Several findings emerge that provide a very clear picture of the positive long-term impact of hedge fund activism.

First, it is found that the firms undertaking divestitures involving hedge fund activists outperform the firms undertaking divestitures initiated by other shareholder activists in the short run. The organizational form of hedge funds and the interventionist tactics employed by activist hedge funds (Becht *et al.*, 2017) position them to be more effective and efficient activists. The outperformance of hedge fund activist-initiated divestitures further provide support to the notion that hedge fund activists are more efficient than other activists. Second, the long-term operating performance and profitability of firms are higher in the wake of the completion of hedge fund activist-initiated divestitures, compared to divestitures initiated by other activists. Studies on divestitures ((John and Ofek, 1995); (Desai and Jain, 1999)) have found that irrespective of the type of divestiture, firms that undertake focus-increasing divestitures experience greater improvements in long-term operating performance (resources

channel) as well as superior long-term stock price reaction (corporate governance channel). The results of this chapter indicate that hedge fund activists initiate divestitures to improve managerial focus, which implies that hedge fund activists are efficient at improving corporate governance by shepherding their targets to major improvements and creating tangible long-term value.

Finally, the most striking result of this chapter: there is no evidence of hedge fund activist-initiated divestitures increasing the probability of takeovers once the divestiture is completed. Greenwood and Schor (2009) imply that the goal of hedge fund activists is to create value through the sale of their targets. While there is obvious value creation through mergers, the value creation is limited to short-term stock price boosts and takeover premium. Furthermore, as witnessed in Chapter 3, the takeover premiums received by the shareholders of targets with and without activists do not differ significantly, which implies that, contrary to the suggestion of some earlier studies, firms do not need to be sold to realize the value of the firm or be the subject of activism. As a result, hedge fund activists are viewed as short-term players whose goal is to make a "quick buck" for their investors. The findings of this chapter indicate, however, that hedge fund activists, using divestitures, actually create tangible improvements in firm value primarily through the *resources* and *corporate governance* channel – and not through the *takeover* channel. This is the main contribution of this chapter.

In addition to the main results, additional analyses are also conducted to have a comprehensive understanding of the impact of hedge fund activist-initiated divestitures. These analyses include examining whether hedge fund activists has a preferred choice of divestiture (spinoffs or selloffs) as well as the impact of hedge fund activist-initiated divestitures on bondholders.

It is found that hedge fund activists increased the probability of spinoffs compared to other activists. Given that it is found that hedge fund activists, in my sample, initiate spinoffs at a much faster rate than other shareholder activists, this could be a reason as to why they increase the probability of spinoffs. Yet another reason could be that spinoffs are focus-increasing divestitures that result in long-term creation (Desai and Jain, 1999), especially since hedge fund activists are found to have created tangible improvements in firm value by increasing managerial focus. Spinoffs are also known to increase the overall efficiency and total factor productivity of firms as a result of managerial discipline hypothesis (Chemmanur,Krishnan and Nandy, 2014). According to the managerial discipline hypothesis, proposed by Chemmanur and Yan (2004), firms become more efficient following spinoffs as a result of the disciplining effects of spinoffs on firm management.

It is also found that the market acknowledges the efficiency of hedge fund activist-initiated spinoffs. Hedge fund activist-initiated spinoffs are found to have outperformed spinoffs initiated by other activists. More specifically, the 5-day cumulative abnormal returns (CARs) of firms undertaking hedge fund activist-initiated spinoffs exceed the 5-day CARs of firms undertaking spinoffs initiated by other shareholder activists by 8.78%. Furthermore, the 11-day cumulative abnormal returns of firms undertaking hedge fund activist-initiated spinoffs exceed the 11-day cumulative abnormal returns of firms undertaking spinoffs initiated by other shareholder activists by 10.40%. These results suggest that the market acknowledges the ability of hedge fund activists to create value through spinoffs as well as the efficiency of hedge fund activists compared to other shareholder activists.

Analysis of the impact of hedge fund activist-initiated divestitures finds that hedge fund activists do not create value for shareholders at the expense of bondholders, that is, bondholders do not experience any wealth destruction through hedge fund activist-initiated divestitures.

This chapter provides several contributions to the existing literature on hedge fund activism. First, it documents a new value-creation channel of hedge fund activism: improved managerial focus through divestitures. Clifford (2008) finds that the improvement in operating performance post hedge fund activist involvement is attributed to the divestiture of underperforming assets. Bergh and Sharp (2015) find that the influence of outside blockholders does have a positive influence on how divestitures were done, even if they are not able to directly intervene in their firms' operations. However, neither of these studies analyse the extent of value creation through hedge fund activist-initiated divestitures. This study contributes towards existing literature through the finding that hedge fund activists, in addition to being efficient external monitors, are found to have also improve managerial focus through corporate divestitures by using interventionist tactics, thereby creating tangible long-term value.

Second, this chapter contributes to the raging ongoing debate over whether hedge fund activism presents a critical problem for US public firms, their investors and the economy. Recent studies suggest that hedge fund activists improve the performance of targeted firms (for example, (Brav,Jiang and Kim, 2015); (Brav *et al.*, 2018)), benefitting all shareholders by promoting managerial and directorial accountability ((Bebchuk,Brav and Jiang, 2015); (Boyson,Gantchev and Shivdasani, 2017)). However, another strand of literature contends that the substantial gains realized by hedge funds through activism impair the long-term performance of firms (Cremers *et al.*, 2018), or hinder the wealth transfer from other shareholders or stakeholders (Klein and Zur, 2011). Most recently, Cremers *et al.* (2018) argue that hedge fund activists disrupt a firm's ability to concretize its commitments to stakeholders that would result in a long-term drop in firm value. The findings of this chapter suggest that hedge fund activists are more than able to achieve long-term value creation and will not sacrifice it for the sake of making a quick buck for their investors. By using

divestitures to improve managerial focus, hedge fund activists actually shepherd their targets in creating long-term value, thereby contributing to the growing literature on the long-term impact of hedge fund activism.

Finally, and more importantly, this study also contributes by playing an advisory role for policymakers and investors: value creation by hedge fund activism is not restricted to upticks in stock prices. Hedge fund activists are in for the long haul while undertaking activist engagements. Other shareholder activists (such as mutual funds) could be nudged towards partnering with hedge fund activists rather than undertaking their own activist engagements, especially since hedge fund activists (unlike their mutual fund counterparts) are free of any major conflicts of interest and have enough flexibility to undertake activist engagements that create long-term value.

The remainder of this chapter is structured as follows: Section 4.2 develops the testable hypotheses by identifying the gaps in the literature. Section 4.3 outlines the procedure of data collection and describes the data samples used for this paper and outlines the methodology used for the empirical analysis. Section 4.4 provides the results. Section 4.5 describes the additional analyses conducted to provide a more comprehensive understanding of the relationship between hedge fund activism and divestitures. Finally, Section 4.6 concludes the paper.

4.2. Literature Review and Hypothesis Development

A number of studies have shown that shareholder activists such as large pension funds and mutual funds have made very little impact on management monitoring, and value creation.

Wahal (1996) studies the efficiency of pension fund activism in the late 1980s by examining all firms targeted by nine major funds from 1987 to 1993. He finds no evidence of significant long-term improvement in either stock price or accounting measures of performance in the

post-targeting period. He concludes that pension fund activism cannot be used as an effective substitute for corporate control.

Black (1998) also supports the notion that institutional investor activism has very little impact on monitoring and bringing a change to firm performance. He concludes that "the currently available evidence, taken as a whole, is consistent with the proposition that the institutional achieve the effects on firms performance that one might expect from this level of effort – namely, not much" ((Black, 1998), p.459).

Del Guercio and Hawkins (1999) examine the impact and motivation of pension fund activism and found that significant additional corporate governance activism and broad corporate change, such as asset sales and restructurings, followed the shareholder proposals. They also find that the shareholder proposals play a complementary role to other governance mechanisms. Furthermore, portfolio movements of the pension funds are found to be generally consistent with fund value maximization and with their stated investment strategies and activism objectives.

Karpoff (2001) is of the opinion that researchers and investors disagree over the role of shareholder activism in the improvement of a target company's value, earnings, and governance structures. He concludes that shareholder activism makes small changes in target firms' governance structures. It however, has negligible impact on share values and earnings.

Romano (2001) reviews the existing corporate finance literature on institutional investors' activities in corporate governance and concludes that the empirical evidence indicates that shareholder activism has little or no effect on targeted firms' performance. Romano (2001) also recommends that activist institutions should reassess their activist agendas, in order to use their resources more effectively.

Denes,Karpoff and McWilliams (2017) summarize and synthesize the results from 73 studies that examine the consequences of shareholder activism for targeted firms. They conclude that activism, which adopts some characteristics of corporate takeovers is associated with improvements in share values and firm operations and activism that is not associated with the formation of ownership blocks is associated with insignificant or very small changes in the target firm value. The findings of this paper also suggest that research based on shareholder activism has become more value increasing over time with the research based on shareholder activism from the 1980s and 1990s generally finding few consequential effects, whereas activism in more recent years has been more frequently associated with increased share values and operating performance. The results of this paper are consistent with the findings of Alchian and Demsetz (1972) who suggest that managerial agency problems are controlled in part by dynamic changes in ownership. The results are also consistent with the observations of Alchian (1950), who notes that business practices adapt over time to mimic successful strategies.

Unlike other shareholder activists, hedge fund activists are known to be efficient activists and value-creators for their target firms in many ways. Factors responsible for this efficiency range from the organisational form of hedge funds to the interventionist tactics employed by hedge fund activists. Interventionist tactics include requesting meeting with the company chairman or the CEO and the willingness to become involved in board elections (Becht *et al.*, 2017). These tactics, in particular, could provide hedge fund activists with an added advantage over other activists, compared to other factors.

Paul Singer's Elliott Management is one of the most aggressive and dominant hedge fund activists. The following excerpt, describing Elliott's activist efforts, provides an excellent example of the extent to which hedge fund activists go to ensure that their campaigns are a success:

"An analyst that follows Elliott argues that the fund's huge size ensures that it has the resources needed to support their activist campaigns over long periods, which also sets it apart from other activist managers. The fund famously held out for 15 years before reaching a deal with the Argentinian government over debt it owned.

Indeed, proxy solicitors advising both companies and targets argue that Elliott Management will spare no expense in its campaigns, coming up with unusual and innovative strategies to convince investors to back their efforts. In Australia, Elliott paid for billboard advertisements in Sydney, Melbourne, Brisbane, and Perth urging shareholders to "Think Smart," a play on a slogan employed by the fund's target, BHP Billiton plc. In another campaign against aluminium giant Alcoa, the fund, in an unprecedented move, even mailed thousands of mini-player devices to retail investors, each with one short four-minute video explaining the activist's position at a targeted company." (Orol, 2018).

The interventionist tactics of hedge fund activists, as described above, would then enable them to achieve a faster resolution of their demands compared to other shareholder activists. Based on this rationale, the first testable hypothesis is constructed as follows:

H1: *Hedge fund activists have a greater speed of resolution of their divestiture demands compared to other shareholder activists.*

Given that the activist strategy adopted by hedge fund activists is more pro-active compared to that of other activists, the short-term market reaction to hedge fund activist-initiated divestitures is expected to be higher than reactions to divestitures initiated by other activists. Based on this rationale, the second testable hypothesis is constructed as follows:

H2: *In the short run, hedge fund activist-initiated divestitures experience higher returns compared to divestitures initiated by other activists.*

Hedge funds are known for their short-termism, so it is logical that superior short-term market reaction is observed for hedge fund activist-initiated divestitures. In order to analyse the impact of hedge fund activism in the long run, a closer look is taken at the three channels mentioned earlier: the corporate governance channel, the resources channel, and the takeover channel.

First, the corporate governance channel proposed by Brav *et al*. (2008) and Boyson and Mooradian (2011) is examined, looking at the long-term market reaction to hedge fund activist-initiated divestitures.

Brav *et al*. (2008) study the impact of hedge fund activism using a large-scale sample over the period 2001-2006, and find that activist hedge funds propose strategic, operational, and financial remedies with success or partial success in two-thirds of the cases. They find that the abnormal returns around the announcement of activist engagement is found to be 7%, on average, with no reversal in the subsequent year. Some of the significant outcomes experienced by target firms are increases in payout, operating performance, and higher CEO turnover. This paper reveals new evidence on the mechanisms and effects of informed shareholder monitoring.

Boyson and Mooradian (2011) examine the role of hedge funds as agents of corporate change and find that activist hedge funds improve both short-term stock performance and long-term operating performance of the target firms. The performance changes are most observable in those target firms where activist hedge funds seek changes in corporate governance and reduction in excess cash.

Overall, the corporate governance channel proposed by Brav *et al.* (2008) as well as by Boyson and Mooradian (2011) suggests that activism should effectively improve the corporate governance of the target firm. If this is true, the result would be a positive stock

market reaction and improved target performance in the wake of the completion of hedge fund activist-initiated divestitures.

Based on their rationale, the third testable hypothesis is constructed as follows:

H3: *In the Long Run, Hedge Fund Activist-initiated Divestitures Experience Higher Returns Compared to Divestitures Initiated by Other Activists.*

Next, the resources channel proposed by Desai and Jain (1999) and John and Ofek (1995) is examined.

John and Ofek (1995) find that asset sales generate an improvement in operating performance of the seller's remaining assets in each of the three years following the asset sale, and this change in operating performance is found to be positively related to the stock returns of the seller at the divestiture announcement. They also find that operating performance improvement and the stock returns are found to be larger for firms that increase their focus. They propose the focus hypothesis, which states that eliminating negative synergies between divested and remaining assets should lead to better performance of the remaining assets after the divestiture. Gains to the seller are also found to be partially due to a better asset between the divested asset and the buyer.

Desai and Jain (1999) examine a sample of 155 spinoffs between the years 1975 and 1991 to investigate whether an increase in focus is an explanation for the stock market gains associated with spinoffs. They find that the announcement period returns as well as the long-run abnormal returns for the focus-increasing spinoffs are significantly larger than the corresponding abnormal returns for the non-focus-increasing spinoffs. Similar results are observed when the change in operating performance is examined for both focus-increasing spinoffs and for the non-focus-increasing spinoffs. Overall, they find that, cross-sectionally,

the stock market performance as well as the operating performance are positively associated with change in focus.

Based on their rationale, the fourth testable hypothesis is constructed as follows:

H4: *Hedge Fund Activist-Initiated Divestitures Create Greater Improvements in the Long-Term Operating Performance and Profitability of Their Targets Compared to Divestitures Initiated by Other Activists.*

Finally, the takeover channel proposed by Greenwood and Schor (2009) is examined in order to understand whether hedge fund activists treat divestitures as a stepping stone that would result in the eventual takeover of the target.

Greenwood and Schor (2009) attribute the large positive abnormal returns, which are observed when a hedge fund announces activist intentions towards a publicly listed firm, to the ability of activists to force the target firm to be acquired. Activists are found to have increased the probability of the acquisition of the target firm, and subsequently, it is found that the activists' portfolios perform poorly during periods when the market-wide takeover interest declines.

Chemmanur and Yan (2004) develop a new rationale for the performance and value improvements following corporate spinoffs, based on corporate control considerations. They find that a spin-off increases the incumbent management's chances of losing control to a more able rival, which then either motivates the incumbent to work harder at managing the firm or to relinquish control of one of the subsidiaries resulting from the spinoff. They also find that spinoffs are associated with positive announcement effects and increases in long-term operating performance.

Therefore, based on this rationale of the takeover channel, the fifth testable hypothesis is constructed as follows:

H5: *Hedge Fund Activists Increase the Probability of Takeover Post Divestitures*

To have a more comprehensive understanding of the impact of hedge fund activist-initiated divestitures, two additional analyses are also conducted: (a) do hedge fund activists have a preference of divestiture? and, (b) what is the impact of hedge fund activist-initiated divestitures on bondholders?

Since corporate divestitures primarily consist of spinoffs and selloffs, it is important to evaluate whether hedge fund activists are more effective in initiating one divestiture over the other.

Prezas and Simonyan (2015), in their paper, highlight the various criteria and scenarios used by firms to choose between spinoffs and selloffs. For instance, they find that undervalued firms are more likely to undertake spinoffs whereas overvalued firms are more likely to undertake selloffs. Hedge fund activists are known to target undervalued firms (Brav *et al.*, 2008). Thus, it is more likely that hedge fund activists would initiate spinoffs over selloffs in order to unlock the untapped potential in the undervalued parent firm.

Chemmanur,Krishnan and Nandy (2014) use a unique sample of plant data obtained from the Longitudinal Research Database to investigate the underlying mechanisms and the real effects of spinoffs on productivity. They find that spinoffs increase total factor productivity because they result in cost savings and the productivity improvements are long-lived. It is also found that plants that are spun off do not underperform parent plants prior to the spin off. Non-acquired plants experience improved productivity immediately following the spinoff whereas acquired plants experience improved productivity immediately following the spinoff. This implies that hedge fund activists could prefer spinoffs because they increase the total factor productivity of their target firms.

Moreover, Bergh and Sharp (2015) find that divesting firms adopt spinoffs when outside blockholders are able to exercise their self-interests over managers, such as with their stockholding concentrations. Hedge fund activists, who are a category of blockholders, employ interventionist tactics during their activist engagements. Interventionist tactics imply that in addition to filing shareholder proposals, writing letters, speaking at general meetings, and talking to media, hedge fund activists often request meetings with the company chairman or the CEO and they are more willing to become involved in board elections and to litigate (Becht *et al.*, 2017). Therefore, they are more likely to initiate spinoffs of their target firms since they are able to exercise their self-interests over managers. Based on this rationale, the sixth testable hypothesis can be constructed as follows:

H6: The *probability of activist-initiated spinoffs is higher when the activist is a hedge fund*

Previous studies such as Klein and Zur (2011) suggest that bondholders seem to be "sacrificial lambs" in the hedge fund activists' process of creating value, that is, hedge fund activism results in a wealth transfer from bondholders to shareholders. To fully understand the ability of hedge fund activists to create value, it is important to analyse whether bondholders benefit from hedge fund activist-initiated divestitures. Based on this rationale, the seventh testable hypothesis is constructed as follows:

H7: *Hedge Fund Activist-Initiated Divestitures Create Shareholder Value at the Expense of Bondholders*

4.3.Data and Methodology

4.3.1. Sample Construction

The central shareholder activism database (CSAD), constructed using hand-collected SC 13D filings that are available from SEC's EDGAR database is used to construct the sample for this chapter. As mentioned earlier, every institutional money manager, including an activist hedge fund, must file a SC 13D document when they attain 5% or more in any class of a company's securities. These documents have to be filed within 10 days post the purchase of the company's securities. The SC 13D filings outline the size of the purchase and summarizes the investors' intentions. Since 2000, it has been common for an activist to attach a letter to the target firm's management or board within their SC 13D filing (Greenwood and Schor, 2009). The most important section of the SC 13D filing, for the purpose of empirical analysis, is the "Item 4: Purpose of Transaction" section, which highlights the intentions of the activist. An activist can have various intentions such as "share repurchases," "sale of target," "spinoff of a target's business," "board representation," or simply "investment purposes."

The initial version of the central shareholder activism database consists of 6,380 activist events by 878 activists spanning across the period from 1994 to 2016.

The activists are classified as follows: Hedge Funds, Financial Institutions, Private Equity Companies, Investment Managers, Investment Companies, Individual Investors, Pension Funds, and Shareholder Committees (Norli,Ostergaard and Schindele, 2015). Classifying the SC 13D filings by activist type, 4,116 SC 13D filings are filed by 292 hedge funds, 186 SC 13D filings are filed by 47 financial institutions, 175 SC 13D filings are filed by 51 private equity companies, 991 SC 13D filings are filed by 196investment managers, 162 SC 13D filings are filed by 42 investment companies, 368 SC 13D filings are filed by 117 individual investors, 308 SC 13D filings are filed by 123industrial owners, 67 SC 13D filings are filed by 3 pension funds, 6 SC 13D filings are filed by 6 shareholder committees, and 1 SC 13D filing is filed by an entity, which cannot be classified into any specific activist type (Unknown).

However, not all events in the central shareholder activism database are instances where the activist demands for a divestiture. As such, to analyse the implications of hedge fund activist-initiated divestitures, the central shareholder activist database is merged with the Thomson One Banker Mergers and Acquisitions Database. The following constraints are applied to obtain the sample: (1) Only divestitures that occur within 36 months after the initial SC 13D filing are considered for this chapter; and (2) only spinoffs and selloffs are considered, since they are the popular divestiture demands.

After applying the aforementioned constraints, the final sample consists of 353 activist-initiated divestitures – of which hedge fund activists initiated 255 and 98 are initiated by other activists. Table 4.1 outlines the percentage of activist-initiated divestitures by year and by activist type.

(Insert Table 4.1 about here)

Figure 4.1 shows the distribution of activist-initiated divestitures by year.

(Insert Figure 4.1 about here)

The target firms' stock price and accounting information (required for further analysis of the impact of hedge fund activist-initiated divestitures) are obtained from CRSP and Compustat respectively.

4.3.2. Methodology

4.3.2.1.Cumulative Abnormal Returns

The divestiture announcement period abnormal returns of the targets are estimated using the market-adjusted model[12], as shown in equation (4.1):

$$AR_{it} = r_{it} - r_{mt} \qquad (4.1)$$

[12] The abnormal returns are also estimated using the market model.

Where r_{it} is the return on stock i in period t and r_{mt} is the return on market in period t.

The cumulative abnormal returns (CARs) of the shareholders of the target companies undertaking divestitures are the sum of the abnormal returns over the 11-days (-5 to +5) [13]surrounding the announcement day of the divestiture, as shown in equation (4.2):

$$CAR_{it} = \sum_{t=-5}^{t=+5} AR_{it} \qquad (4.2)$$

4.3.2.2.Measuring Long-Term Performance

Long-term market reactions to activist-initiated divestitures are estimated using the buy-and-hold abnormal returns computed using the market-adjusted model, as shown in equation (4.3) (Cai,Liu and Mase, 2008):

$$BHAR_{iT} = \left[\prod_{t=1}^{T}(1 + r_{it})\right] - [\prod_{t=1}^{T}(1 + r_{mt})] \qquad (4.3)$$

The mean BHAR over a period T is estimated as shown in equation (4.4):

$$\overline{BHAR_T} = \frac{1}{n}\sum_{i=1}^{n} BHAR_{iT} \qquad (4.4)$$

4.3.2.3.Univariate Analysis

The announcement period gains of the target firms undertaking divestitures with hedge fund activist involvement and the announcement period gains of the target firms undertaking divestitures initiated by other activists are analysed using the *t-test* (two sided) to assess their statistical significance.

4.3.2.4.Multivariate Analysis

To examine whether hedge fund activist-initiated divestitures create long-term value by increasing managerial focus, two measures of firm performance, return on assets (ROA) and

[13] The cumulative abnormal returns (CARs) are also estimated for the 3-day [-1, +1] and 5-day [-2, +2] event windows.

firm profitability (Profitability), post the divestiture completion, are regressed against a set of explanatory variables. Equation (4.5) estimates the regressions that analyses the ROA:

$$ROA_{it} = \alpha + \beta_1 HedgeFund + \beta_2 Ln(MV)_{it} + \beta_3 \left(\frac{M}{B}\right)_{it} + \beta_4 Leverage_{it} + \beta_5 \left(\frac{Cash}{Assets}\right)_{it} + \beta_6 \left(\frac{Capex}{Assets}\right)_{it} + \beta_7 (Dividend\ Yield)_{it} + \beta_8 (Distress)_{it} + \varepsilon_{it} \quad (4.5)$$

The dependent variable is ROA_{it}, which measures the operating performance of the firm at t=1, 2, and 3 years following the completion of the divestiture.

Equation (4.6) estimates the regression that analyses firm profitability:

$$Profitability_{it} = \alpha + \beta_1 HedgeFund + \beta_2 Ln(MV)_{it} + \beta_3 \left(\frac{M}{B}\right)_{it} + \beta_4 Leverage_{it} + \beta_5 \left(\frac{Cash}{Assets}\right)_{it} + \beta_6 \left(\frac{Capex}{Assets}\right)_{it} + \beta_7 (Dividend\ Yield)_{it} + \beta_8 Distress_{it} + \varepsilon_{it} \quad (4.6)$$

The dependent variable is $Profitability_{it}$, which measures the firm profitability at t=1, 2, and 3 years following the completion of the divestiture.

4.3.2.5.Measuring Probability of Mergers in the wake of the Divestiture

To examine whether hedge fund activist-initiated divestitures create value through the takeover channel, a probit model is employed, as shown in equation (4.7), to estimate whether activist hedge funds increased the probability of takeovers post the completion of the divestiture:

$$\Pr(Acquired = 1) = \emptyset(X'\beta) \quad (4.7)$$

Where φ (.) is the cumulative distributive function (CDF) of the standard normal distribution and

$$X'\beta = \beta_0 + \beta_1 HedgeFund + \beta_2 Spinoff + \beta_3(HedgeFundxSpinoff) + \beta_4 Ln(MV)_{it} + \beta_5\left(\frac{M}{B}\right)_{it} + \beta_6 Leverage_{it} + \beta_7\left(\frac{Cash}{Assets}\right)_{it} + \beta_8\left(\frac{Capex}{Assets}\right)_{it} + \beta_9 DividendYield + \beta_{10} ROA + \varepsilon_{it} \quad (4.8)$$

The dependent variable in equation (4.7) is the *Acquired* dummy variable, which takes the value of one for targets that were acquired following the divestitures involving activists, and zero for targets that remain independent following the divestiture.

The key variable of interest in all of the aforementioned multivariable specifications is the *HedgeFund* dummy variable, which takes the value of one for hedge fund activist-initiated divestitures, and zero for divestitures initiated by other activists. All control variables used in these specifications are explained in Appendix 4A.

4.3.2.6.Measuring Probability of Hedge Fund Activist-Initiated Spinoffs

To test the fifth hypothesis, a probit model, as estimated by equation (4.9), is employed:

$$\Pr(Spinoff = 1) = \varphi(X'\beta) \quad (4.9)$$

Where φ (.) is the cumulative distribution function (CDF) of the standard normal distribution, and

$$X'\beta = \beta_0 + \beta_1 HedgeFund + \beta_2 Ln + \beta_3\left(\frac{M}{B}\right) + \beta_4 Leverage + \beta_5\left(\frac{Cash}{Assets}\right) + \beta_6\left(\frac{Capex}{Assets}\right) + \beta_7 DividendYield + \beta_8 ROA + \varepsilon \quad (4.10)$$

The dependent variable in equation (4.9) is the *Spinoff* dummy variable, which takes the value of one for activist-initiated spinoffs and zero for activist-initiated selloffs. The key variable of interest, as seen from equation (4.10), is the *HedgeFund* dummy variable, which takes the value of one for divestitures involving hedge fund activists and zero for divestitures

involving other shareholder activists. Appendix 4A describes the remaining control variables in equation (4.10).

4.3.2.7.Measuring the Impact of Hedge Fund Activist-Initiated Divestitures on Bondholders

The short-term and long-term abnormal returns to bondholders are computed using the methodology of (Klein and Zur, 2011). The short-term abnormal returns are computed as follows:

$$BR_{t=0} = \frac{BP_{t+1} + C_t - BP_{t-10}}{BP_{t-10}} \qquad (4.11)$$

Where BP_{t+1} is the bond price on the first trading day after day zero, BP_{t-10} is the price for the same bond for the earliest transaction that took place within 10 calendar days prior to day zero, and C_t is the sum of all coupon payments between day (t-10) and day (t+1).

The long-term abnormal returns are computed as follows:

$$BR_{t=0} = \frac{BP_{t+365} + C_t - BP_{t+1}}{BP_{t+1}} \qquad (4.12)$$

Where BP_{t+365} is the bond price for the latest transaction that took place within 365 days following day zero, BP_{t+1} is the bond price for the same bond on the first trading day after trading day zero, C_t is the sum of all coupon payments between days (+2, +365). To account for possible implication of outliers in data, all continuous variables in the aforementioned multivariate specifications are winsorized at the 1% and 99% levels.

4.4.Results and Analysis

4.4.1. How fast are Hedge Fund Activists?

Table 4.2 outlines the average time difference between activist engagement date and the divestiture announcement date and provides preliminary corroboration of the efficiency of hedge fund activists.

As evidenced from Table 4.2, it is found that activist-initiated spinoffs are announced faster than activist-initiated selloffs. Furthermore, it is found that the time to resolution of divestiture demand is shorter for hedge fund activists compared to other shareholder activists. This could be because of the ease with which hedge fund activists are able to undertake activism engagements compared to their mutual fund or pension fund counterparts.

Hedge fund activists successfully initiate a spinoff within 11.5 months, on average, after disclosing their initial stake in their targets. Other shareholder activists take approximately 16 months, on average, to attain the same feat.

(Insert Table 4.2 about here)

Even when the divestiture is a selloff, hedge fund activists achieve swifter success, with hedge fund activist-initiated selloffs being resolved within approximately 15 months, on average, whereas selloffs initiated by other shareholder activists are resolved within 17 months, on average.

Overall, hedge fund activists get their job done much more quickly than other shareholder activists. This result, therefore, contributes to the existing literature, by providing the first evidence on the speed of resolution of activist engagements.

However, speedy results do not imply value creation, they simply suggest that the tactics employed by hedge fund activists help to achieve a faster resolution compared to other shareholder activists. Furthermore, it is also possible that hedge fund activists are craving a rapid exit, thereby implying short-termism. Further tests are therefore needed, to fully understand the efficiency of hedge fund activism.

4.4.2. Summary Statistics

Table 4.3 provides the summary statistics of both the hedge fund activist sample and the other activist sample.

While a majority of the characteristics are similar for the targets of hedge fund activists and other shareholder activists, the hedge fund activist targets have lower capital expenditures, featured higher (but still negative) ROA, are more financially sound, and have higher (but still negative) cash flows to equity, compared to targets of other shareholder activists.

In other words, despite being financially sound, hedge fund activist targets are found to be suffering from poor capital allocation, as evidenced by the negative ratio of capital expenditures to assets and cash flows to equity, thereby making them ideal candidates for divestitures.

(Insert Table 4.3 here)

The evidence from the summary statistics further shed light on the efficiency of hedge fund activists, that is, they perform extensive due diligence compared to other shareholder activists in identifying those targets whose value stands to be improved through corporate divestitures.

4.4.3. Announcement Effects of Divestitures with Hedge Fund Activist Involvement

This section, the announcement effects (short-term and long-term market reactions) of hedge fund activist-initiated divestitures are examined and compared to the announcement effects (short-term and long-term market reactions) of divestitures initiated by other shareholder activists.

The short-term market reaction, as mentioned earlier, is measured using the 3-day, 5-day and 11-day cumulative abnormal returns (CARs) computed using the market-adjusted model. For the purpose of robustness, the CARs are also computed using the market model.

The long-term market reaction, as mentioned earlier, is measured using the 12-month, 24-month, and 36-month buy-and-hold abnormal returns computed using the market-adjusted model.

Panel A of Table 4.4 compares the announcement effects (that is, the short-term impact) of the hedge fund activist sample and the other activist sample. Firms undertaking divestitures initiated by hedge fund activists are found to have outperformed targets undertaking divestitures initiated by other activists. More specifically, the difference between the 11-day cumulative abnormal returns of the hedge fund activist sample and the 11-day cumulative abnormal returns of targets of other shareholder activists is positive and significant at the 10% level. More specifically, it is found that firms undertaking divestitures initiated by hedge fund activists outperform those firms undertaking divestitures initiated by other shareholder activists by 2.30%.

The analysis of the announcement effects of divestitures indicates that hedge fund activists create superior short-term value through divestitures compared to other activists. This analysis also provides evidence of how the market acknowledges the efficiency of hedge fund activism compared to other activists.

(Insert Table 4.4 here)

Panel B of Table 4.4 outlines the results of the analysis of the long-term market reaction. The picture regarding the efficiency of hedge fund activism becomes a lot clearer, since hedge

fund activist-initiated divestitures are being found to have outperformed divestitures initiated by other shareholder activists in the long run, with the difference statistically significant up to 24 months following the completion of the divestiture.

More specifically, targets of hedge fund activist-initiated divestitures outperform the targets of divestitures initiated by other shareholder activists by 34.19% (statistically significant at 1% level) in the first 12 months and by 42.65% (statistically significant at 5% level) 24 months after the completion of the divestiture.

These findings show that by undertaking divestitures, hedge fund activists create superior long-term value compared to other shareholder activists.

Overall, while there is no evidence of long-term reversal in the stock-market reaction to targets of hedge fund activist-initiated divestitures, the reality is grim for targets of other shareholder activists, with the market having lost confidence in their ability to undertake divestitures. This result contributes towards understanding the efficiency of activist hedge funds compared to other shareholder activists.

4.4.4. Hedge Fund Activist-Initiated Divestitures: Long-Term Performance

In the popular TV show, Billions, (Hornbacher, 2016), the following discussion between hedge fund activist Robert Axelrod (portrayed by Damian Lewis) and the CEO of the fictional company YumTime sums up the attitudes of those whose are critical toward hedge fund activists:

"*Axelrod: Folks, my proposal is simple. Return to the original recipes and restore the YumTime brand to its former glory.*

YumTime CEO: And then what? After a good quarter or two, you spin it off? Do you see what's happening here? This carpetbagger, he comes in here, he shakes things up, he sells the company off in pieces, and then he dumps his shares the minute it ticks up. He's a raider, plain and simple.
Axelrod: Not my intention."

As observed from the aforementioned excerpt, hedge fund activists are considered to be focused on the short term, and critics accuse them of forcing CEOs of their target companies to play the quarterly game.

While creating superior market returns (as observed in the previous section), both in the short-term and in the long-term, is a sign of efficiency, the "raider" tag will always be attached to activist hedge funds unless there is concrete evidence that they improve firm performance in the long term.

To examine the impact of hedge fund activist-initiated divestitures on the long-term performance of target firms, two measures of firm performance are used: operating performance (measured using Return on Assets) and firm profitability.

First, univariate tests are conducted to examine the impact of hedge fund activist-initiated divestitures. The results are outlined in Table 4.5 and allows a clear picture to emerge: *hedge fund activist-initiated divestitures improve long-term ROA, whereas divestitures initiated by other activists damage long-term ROA.*

(Insert Table 4.5 about here)

The univariate analysis is further supported by the multivariate setting whereby the impact of hedge fund activist-initiated divestitures on ROA is examined by estimating the OLS regression outlined by equation (4.5) in the methodology section. The results are outlined in Table 4.6, and it is clear that the effects become more pronounced in year 2 and year 3 following the completion of the divestiture, with firms undertaking hedge fund activist-initiated divestitures improving their ROA by 14.12% and by 10.23% respectively, compared to firms that undertook divestitures initiated by other activists.

(Insert Table 4.6 about here)

The findings of the ROA analyses are reaffirmed by plotting ROA 1-year prior to and up to 3 years following the activist-initiated divestiture. Figure 4.2 shows the plot, which clearly illustrates that hedge fund activist-initiated divestitures have steadily improved operating performance. On the contrary, targets of other shareholder activists are found to have experienced deteriorating operating performance in the long term.

(Insert Figure 4.2 about here)

Next, the impact of hedge fund activist-initiated divestitures on the second measure of firm performance, that is, firm profitability, is examined by conducting univariate and multivariate analyses[14]. Table 4.7 outlines the results from the univariate analysis and Table 4.8 outlines the results of the multivariate analysis.

Yet again, both analyses provide the same story as that of the ROA analyses, that is, hedge fund activist-initiated divestitures improved firm profitability, whereas divestitures initiated by other activists destroyed firm profitability in the long-term.

(Insert Table 4.7 about here)

[14] Firm Profitability is regressed against a set of explanatory variables and the regression is estimated using Equation (4.6).

As evidenced from Table 4.8, similar to ROA, improvements in the firm profitability as a result of hedge fund activist-initiated divestitures becomes statistically significant in Year 2 and Year 3 post the completion of the divestiture. More specifically, targets of hedge fund activists improve their firm profitability by 15.54% in Year 2 and by 8.45% in Year 3, compared to targets of other activists.

(Insert Table 4.8 about here)

The findings of the firm profitability analyses are reaffirmed by plotting firm profitability 1-year prior to and up to 3 years following the activist-initiated divestiture. Figure 4.3 displays the plot and there are no surprises in the storyline, that is, *hedge fund activist-initiated divestitures steadily improve firm profitability, whereas targets of other activists experience deteriorating profitability in the long run*.

(Insert Figure 4.3 about here)

For a more comprehensive understanding behind the ability of hedge fund activist-initiated divestitures to create value, the driving force behind the value creation is evaluated, that is, do hedge fund activists use divestitures to improve managerial focus, thereby improving firm performance (resources channel), or do they use divestitures as a tool to initiate a takeover (M&A channel). While the former would provide evidence that hedge fund activists are efficient long-term value creators, the latter would add further support to the idea that hedge fund activists are prowling around as "wolves," eager to break the company to pieces, sell it for parts and dump their shares at the first sign of a jump in the stock price.

The M&A channel is analysed by examining whether the firms that have undertaken activist-initiated divestitures are acquired within a year after the divestiture completion. The probit model estimated by equation (4.7) is used for this analysis and Table 4.9 provides the results.

As evidenced from Table 4.9, it is found that hedge fund activists do not increase the probability of takeovers following the completion of the divestiture. Furthermore, while shareholder activism does not, in general, increase the probability of takeovers, the type of divestitures has a statistically significant impact. More specifically, activist-initiated selloffs are found to have increased the probability of takeovers by 19.40%. This could be because asset sales are found to be associated with increased acquisition probability (Mavis *et al.*, 2016). However, there is no evidence of hedge fund activists using the M&A channel to create value through divestitures.

(Insert Table 4.9 about here)

The aforementioned results combined with the analyses of the impact of hedge fund activist-initiated divestitures on ROA and on Firm Profitability contribute towards understanding the long-term impact of hedge fund activism. The findings indicate that activist hedge funds create value through divestitures by means of increased managerial focus. According to Desai and Jain (1999) and John and Ofek (1995), negative synergies between divested and remaining assets after the divestiture are eliminated, because of improved managerial focus. Hedge fund activists, using their interventionist tactics (Becht *et al.*, 2017), create tangible improvements in firm value, both in terms of long-term market returns and with respect to operating performance.

Yet another striking finding is that activists other than hedge funds, initiate divestitures that result in value destruction. While several studies ((Karpoff,Malatesta and Walkling, 1996); (Wahal, 1996); (Black, 1998); (Karpoff, 2001)) have found no evidence of value creation by other activists, the findings of this study, indicating the role of other activists in value destruction, paints a darker picture. This could be because of the inefficient use of resources by other shareholder activists for their activism campaigns (Romano, 2001) or it could be due

to the fact that the diversification strategy pursued by traditional institutional investors is difficult to combine with strategic activism (Kahan and Rock, 2007). Contrast this with the incentive structure of hedge fund managers (Kahan and Rock, 2007), as well as the ability of hedge funds to use complex financial instruments like derivatives (Hu and Black, 2007), which enables them to be more efficient activists. The findings of this study not only contribute by highlighting this efficiency but also indicate that hedge fund activists are long-term value-creators ("shepherds") and not quick-buck artists ("wolves").

Whatever the reason may be, the findings of this study suggest that it may be best for other shareholder activists to team up with activist hedge funds while undertaking activist efforts, as there can be no qualms about their ability to create long-term value. Signs of this shift are already evident, with other shareholder activists such as pension funds having begun either to side with activist hedge funds or to invest in activist hedge funds (Toonkel and Kim, 2013).

4.5.Additional Analyses

In this section, additional analyses are conducted to ascertain whether hedge fund activists have a preferred type of divestiture, as well as to discover whether hedge fund activist-initiated divestitures create shareholder value at the expense of bondholders.

4.5.1. Hedge Fund Activists: Choice Between Spinoffs and Selloffs

This section examines whether hedge fund activists increase the likelihood of one type of divestiture (spinoff or selloffs) compared to other activists.

The probit model outlined by equation (4.9) is estimated to analyse whether hedge fund activists increased the probability of spinoffs compared to other activists. Table 4.10 shows the results of the probit regression.

As evidenced from Table 4.10, it is found that hedge fund activists increased the probability of spinoffs compared to other shareholder activists. More specifically, the probability of spinoffs increases by 14.52% when the shareholder activist is a hedge fund.

(Insert Table 4.10 about here)

Spinoffs are known to allow companies to focus their energy and resources more efficiently. For instance, Brinker International Restaurants spun off and sold a chain of their Mexican restaurants to an affiliate of a private equity firm in 2010 and its share price has approximately trebled. According to Jim Osman, CEO of the *Spinoff Report*, businesses that own a variety of brands are "less transparent and typically undervalued"; and the best way to get rid of their "conglomerate discount" is by breaking them up (Decatur, 2014).

While many of the aforementioned rationale can justify the popularity of spinoffs among hedge fund activists, the interventionist tactics employed by hedge fund activists suggest that managerial discipline hypothesis, proposed by (Chemmanur and Yan, 2004) is the most logical rationale behind the popularity of spinoffs among hedge fund activists. According to the managerial discipline hypothesis, spinoffs increase the probability of the incumbent management losing control to a more able rival. This, in turn, motivates the incumbent management to work hard at managing the firm, which will subsequently; result in increased long-term operating performance. Assuming that following a divestiture, the probability of a takeover increases, the threat of a takeover can motivate the management to work harder to increase firm performance.

Furthermore, as observed earlier, from Table 4.2, spinoffs are resolved at a faster rate than selloffs by hedge fund activists. This could be yet another reason for the higher probability of hedge fund activist-initiated spinoffs.

There is also further evidence of the ability of hedge fund activists to increase managerial focus. The inverse relationship between the *Spinoff* dummy and *Leverage, (Cash/Assets), and (Capex/Assets)* suggests that hedge fund activist-initiated spinoffs coincide with the goal of increasing managerial focus.

The market reaction to hedge fund activist-initiated spinoffs is also estimated. Table 4.11 provides the results. It is found that hedge fund activist-initiated spinoffs have a more positive market reaction to the targets' share price compared to spinoffs undertaken by other activists. More specifically, the targets of hedge fund activist-initiated spinoffs outperform the targets of spinoffs initiated by other shareholder activists by 8.78% in the 5-day event window [-2, +2] and by 10.40% in the 11-day event window [-5, +5].

(Insert Table 4.11 about here)

The results from Table 4.11 provides further evidence that hedge fund activists preferred spinoffs over selloffs to create value and not just because spinoffs are resolved faster.

4.5.2. Hedge Fund Activist-Initiated Divestitures: Do Bondholders Benefit?

This section examined the impact of hedge fund activist-initiated divestitures on bondholders. The results are provided in Table 4.12.

As evidenced from Panel A of Table 4.12, a case can be made that hedge fund activists do not, in the short term, create significant value for bondholders through divestitures. While both hedge fund activist-initiated divestitures and divestitures initiated by other shareholder activists experienced negative abnormal returns, the returns are not statistically significant.

(Insert Table 4.12 about here)

While both hedge fund activists and other shareholder activists create positive and significant gains in the long run, the difference is once again statistically insignificant. However, while there is no outperformance, targets of hedge fund activist-initiated divestitures experienced long-term bond returns of 13.15%, statistically significant at the 1% level.

Overall, the findings of this section, contrary to Klein and Zur (2011), suggest that hedge fund activist-initiated divestitures create value for shareholders and bondholders alike, thereby providing even more evidence that hedge funds are more efficient activists than other institutions such as pension funds and mutual funds. These findings further contribute to the literature that examines the impact of hedge fund activism on other stakeholders.

4.6.Conclusion

This chapter studies an important value-creation channel by hedge fund activists: corporate divestitures. More specifically, this chapter examines whether hedge fund activists can be efficient, long-term value-creators, that is, "shepherds," and whether their expertise can benefit society. By examining, a sample of 353 activist-initiated divestitures (spinoffs and selloffs), spanning between 1994 to 2016, this chapter examines the ability of hedge fund activists to create value as well as tests their efficiency compared to other shareholder activists.

This chapter contains several important results. First, it is found that the interventionist tactics of hedge fund activists as well as their ability to form "wolf-packs" results in a faster resolution of hedge fund activist-initiated divestitures compared to those initiated by other shareholder activists.

Second, it is found that hedge fund activist-initiated divestitures outperform the divestitures initiated by other activists in the short-run. More specifically, the 11-day cumulative

abnormal returns of hedge fund activist-initiated divestitures exceed the 11-day cumulative abnormal returns of hedge fund activist-initiated divestitures by 2.30%.

Third, this chapter examines whether hedge fund activists create long-term value in their targets through divestitures. It is found that the long-run stock performance of firms that undertook hedge fund activist-initiated divestitures exceed the long-run stock performance of firms that undertook divestitures initiated by other shareholder activists. Furthermore, it is found that hedge fund activist-initiated divestitures improve the long-term operating performance of the firm up to three years following the completion of the divestitures whereas other shareholder activists are found to destroy value of their targets by initiating divestitures. Similar results are observed in the analysis of the long-term firm profitability following the completion of divestitures. This improved firm performance is attributed to the ability of hedge fund activists to increase managerial focus, thereby implying that they are efficient, long-term value-creators compared to other shareholder activists.

Fourth, it is also found that the type of activist does not have any impact on the probability of takeovers following the completion of divestiture. It is found that activist-initiated selloffs increase the probability of takeovers following the completion of divestiture. However, this can be attributed to the fact that asset sales lead to increased acquisition probability (Mavis *et al.*, 2016). Therefore, there is no evidence of hedge fund activist-initiated divestitures being used as a tool to initiate sale of their target, thereby implying that hedge fund activists are more than able to create tangible long-term value and are not just short-term players interested in stock price boosts.

Additional analysis find that hedge fund activists increase the probability of spinoffs compared to other activists. While several factors, such as managerial discipline hypothesis can be the reason for hedge fund activists' preference of spinoffs, evidence implies that it is

the ability of hedge fund activists to increase managerial focus that leads to the increase in probability of spinoffs, as implied by the inverse relationship between the *Spinoff* dummy and *Leverage*, *(Cash/Assets),* and *(Capex/Assets)*.

Furthermore, spinoffs are found to have resolved at a faster rate than selloffs by hedge fund activists. This could be yet another reason for the higher probability of hedge fund-activist initiated spinoffs.

Finally, analysis of the impact of hedge fund activist-initiated divestitures on bondholders find that while both hedge fund activists and other shareholder activists create positive and significant gains in the long run, there is no outperformance in the bond returns of targets of hedge fund activist-initiated divestitures compared to targets undertaking divestitures initiated by other activists. Despite no outperformance, targets of hedge fund activist-initiated divestitures experience long-term bond returns of 13.15% (statistically significant at the 1% level), thereby implying that hedge fund activist-initiated divestitures create value for both shareholders and bondholders.

Overall, this chapter concluded that hedge fund activists use divestitures to create value through the resources channel (proposed by John and Ofek (1995) and Desai and Jain (1999)) as well as through the corporate governance channel (proposed by Brav, Jiang, Partnoy, and Thomas (2008)) and Boyson and Mooradian (2011)). There is no evidence of hedge fund activists creating value through the takeover channel (proposed by Greenwood and Schor, (2009)).

This chapter makes several important contributions to the existing literature on hedge fund activism. A new value-creation channel of hedge fund activism is documented in this chapter, that is, *improved managerial focus through divestitures*. It is also found that hedge fund activists, in addition to being efficient external monitors, also improve managerial focus

through corporate divestitures using interventionist tactics, thereby creating tangible long-term value. This study also contributes to the intense ongoing debate over the extent to which hedge fund activism is a critical problem for US public firms, their investors, and the economy in general.

Barring the aforementioned limitations, this chapter provides the most concrete evidence that hedge fund activism is beneficial to the economy and contributes positively not just in the short-term, but also in the long-term. While Chapter 3 provides a glimpse of the ability of hedge fund activists to create long-term value, Chapter 4 contributes towards the existing literature by cementing the story: *hedge fund activism is beneficial to the economy*.

Since hedge fund activists are more than capable of creating positive long-term value, attention now switches to providing further evidence that would prevent policymakers from imposing stricter regulations on activist hedge funds. By studying one of the most complex financial instruments used by hedge funds, financial derivatives, and their impact on activism campaigns, Chapter 5 sends a clear message to policymakers that they need to adopt a cautious approach towards regulating activist hedge funds.

CHAPTER 5: HEDGE FUND ACTIVISM & DERIVATIVES

5.1.Introduction

Chapter 3 provides a glimpse of the long-term game plan of hedge fund activism and also contributes by providing evidence that activists create value indirectly for firms that are not their original targets. However, the evidence of the activists' long-term game plan is not convincing enough to indicate that activist hedge funds are beneficial to the economy.

Chapter 4 contributes further towards understanding the long-term impact of hedge fund activism by documenting a new value-creation channel of hedge fund activism: corporate divestitures. Hedge fund activists do not only create long-term value by improving managerial focus through corporate divestitures but they are also found to be superior to other shareholder activists.

Chapter 4 sends a clear message to policymakers and other shareholder activists, that is, hedge fund activists are more than capable of playing the long-term game and their ability to create value is not restricted to upticks in stock prices. Other shareholder activists (such as mutual funds) are encouraged to partner with hedge fund activists instead of undertaking their own activism campaigns, especially since activist hedge funds are free of any major conflicts of interest and have enough flexibility to undertake activist engagements that create long-term value.

This chapter continues to focus on the policy debate about regulating activist hedge funds by studying the role of one of the most powerful weapons available to hedge funds, derivatives, in hedge fund activism. Despite evidence that activist hedge funds rarely use derivatives (Partnoy, 2015), a provision of Brokaw Act calls for expanding the concept of beneficial

ownership to include more derivatives (Brav, Heaton and Zandberg (2018)). By comparing the performance of activist hedge funds who use derivatives with the performance of activist hedge funds who do not use derivatives, this chapter aims to contribute by providing a clear understanding about the actual role derivatives play while undertaking activist campaigns.

If activist hedge funds who do not use derivatives end up creating superior value, then not only does it send a message to hedge fund activists that not using derivatives might be more effective, but also it sends a message to policymakers that provisions like the one that calls for expanding the concept of beneficial ownership to include more derivatives would amount to unnecessary regulation.

5.1.1. Example: Bill Ackman vs. Herbalife: An example of derivatives used by activist hedge funds

One of the most popular hedge fund activist engagements is William Ackman's Pershing Square Capital Management targeting Herbalife. William Ackman's Pershing Square Capital Management bet $1 billion against Herbalife after accusing it of running a pyramid scheme. In 2013, Ackman swapped more than 40% of his shares for put options, as per Pershing Square's investor letter. The letter is stated as follows:

"*In order to mitigate the risk of further mark-to-market losses on Herbalife, in recent weeks we have restructured the position by reducing our short equity position by more than 40% and replacing it with long-term derivatives, principally over-the-counter put options. The restructuring of the position preserves our opportunity for profit – if the Company fails within a reasonable time frame we will make a similar amount of profit as if we had maintained the entire initial short position – while mitigating the risk of further substantial mark-to-market losses – because our exposure on the put options is limited to the total*

premium paid. In restructuring the position, we have also reduced the amount of capital consumed by the investment from 16% to 12% of our funds."

Mr. Ackman recognized losses and covered $400 million worth of Herbalife stock, according to the letter, by buying over-the-counter (OTC) put options. This enabled him to limit his losses from the stock going up further. If the stock stayed at the same level or went up, Mr. Ackman and Pershing Square would have only made a minor loss per share. However, if the stock declined below the strike prices, then Mr. Ackman and Pershing Square would have profited (La Roche, 2013). William Ackman's use of put options in his battle against Herbalife is a classic example of how activist hedge funds utilize derivatives in their campaigns.

Despite activist hedge funds rarely using derivatives (Partnoy, 2015), there are a number of reasons why they can be beneficial to hedge fund activists. First, the lack of sufficient regulation plays a key role. There were many cases in which hedge fund activists used "empty voting" strategies (Anabtawi and Stout, 2008). "Empty voting" strategy involves the activist separating the right to vote shares from the beneficial ownership of these shares. Furthermore, derivatives are very often used as constituents of activist strategies, because they are almost unregulated, leveraged, unstandardized and opaque. The lack of regulation is recorded by (Helleiner and Pagliari, 2009), who find that in the case of hedge funds, regulators focused on the "indirect regulation," that is, they emphasized on overseeing the involvement of bank lending. At the same time, they encourage hedge funds and their bank counter-parties to self-regulate and disclose information to the markets ((Eichengreen, 2003) ;(Robotti, 2006)).

Second, the lack of legal barriers that restrict hedge funds from over-leveraging and excessive short selling, as observed by Shadab (2009), also implicitly encourages activist hedge funds towards using derivatives for their campaigns. For instance, hedge funds are typically exempt from the Company Act, which imposes heavy regulations upon financial institutions against risky betting. More specifically, under the Company Act, entities that are using short sales or derivatives must hedge their positions in a segregated account, a clause that is not applicable to hedge funds. As a result, hedge funds' positions of derivatives can be very aggressive, and as a result, can be more effective while pursuing activist strategies. Shadab (2009) also finds that the superior performance of hedge funds is attributable to the legal regime under which hedge funds operated, thereby allowing them to pursue the aforementioned innovative investment strategies. The research by Chen (2011) provides further evidence that hedge funds using derivatives exhibit lower fund risks, such as market risk and event risk, and therefore, are less likely to liquidate in a deteriorated market condition. Chen (2011) also finds that derivatives are more used by hedge funds that require a higher minimum investment, charge higher fees, have shorter capital lockup periods[15], and employ effective auditing services.

Overall, existing literature has justified why traditional hedge funds utilize derivatives as part of their trading strategies.

However, as mentioned earlier, unlike traditional hedge funds, activist hedge funds are reluctant to use derivatives. Instead, they prefer to buy stocks of target firms they believe are undervalued (Partnoy, 2015). Furthermore, according to a study by Deloitte (2014), the additional costs arising from credit valuation adjustment (CVA) charges are found to have

[15] Greenwood and Schor (2009)

been highest for equity derivatives. Credit valuation adjustment can be described as the market value of counterparty credit risk. This could be one of the reasons why most activist hedge funds prefer to directly purchase the target firm's stock instead of purchasing derivatives.

Overall, despite the drawbacks, the use of derivatives provides hedge fund activists with enough flexibility to undertake activist campaigns. Therefore, it is important to understand, from a policy perspective as well as from an activist's perspective, whether the use of derivatives creates additional value or destroys value.

In this study, a set of hand-collected sample of engagements by activist hedge funds is constructed and this dataset is used to measure the market reactions when activists use derivatives to hoard targeted stocks and disclose their stakes in the targeted companies. This study also aims to contribute to existing studies by examining the possibility of derivatives as an instrument to drive down the price volatility of the targeted stock. Finally, the role of derivatives is examined with respect to the most popular and profitable activist strategy ((Greenwood and Schor, 2009) ;(Becht *et al.*, 2017)): mergers and acquisitions.

Several findings emerge that provide valuable contributions towards understanding the role of derivatives in hedge fund activism campaigns. First, it is found that the market reacts positively to targets of hedge fund activists around the period of disclosure irrespective of whether hedge fund activists use derivatives or not. However, the abnormal returns of targets of hedge fund activists who do not use derivatives exceed the abnormal returns of targets of hedge fund activists who use derivatives and the difference is statistically significant at 1% level. This result suggests that the market believes that hedge fund activists who purchase the

target shares directly have a higher probability of successful activism than those who adopt a "wait-and-watch" approach by using derivatives.

Second, with respect to idiosyncratic volatility, once again, both hedge fund activists who use derivatives and the hedge fund activists who do not use derivatives aid in the reduction of idiosyncratic volatility post the announcement date. However, the idiosyncratic volatility is found to have reduced more for targets of hedge fund activists who do not use derivatives.

Finally, hedge fund activists who do not use derivatives for their activist engagements increase the probability of takeovers of their targets, thereby justifying the positive market reaction towards these targets. As mentioned earlier, Greenwood and Schor (2009) attribute the positive abnormal returns experienced by the target around the activist engagement period to the ability of the activist to push for the sale of the target. This study also finds that the hedge fund activists who do not use derivatives target smaller companies compared to the targets of hedge fund activists who used derivatives, which suggests that it makes it easier for these activist hedge funds to pursue the sale of the target without having to seek an increase in their effective ownership stake through the usage of derivatives (Hu and Black, 2007).

This chapter provides some valuable contributions to the existing literature on hedge fund activism. More specifically, the contribution is threefold. First, this is the first paper that analyses the role of derivatives in hedge fund activism in a comprehensive manner. Existing studies have considered the possibilities of derivatives influencing hedge fund activism, but have not studied the role of derivatives, especially with respect to volatility.

Second, this paper contributes by studying the market reaction to the use of derivatives by hedge fund activists and finds that although hedge fund activists who do not use derivatives create more value compared to those hedge fund activists who use derivatives; using derivatives does not result in value destruction. Therefore, it sends a clear message to policymakers that regulating activist hedge funds by reducing their flexibility appears pointless. Policymakers are urged to be more cautious while introducing provisions to regulate activist hedge funds. For instance, given that there is value creation using derivatives, the provision of the now failed Brokaw Act that calls for expanding the concept of beneficial of ownership to include more derivatives (Brav, Heaton and Zandberg, 2018) is not effective.

Finally, this study contributes by providing a testing ground for studying the ability of hedge fund activists to create value through the use of derivatives. As mentioned earlier, Greenwood and Schor (2009) find that the abnormal positive reactions experienced when an activist disclosed his/her stake are attributed to the ability of the activist to force the company to be acquired. Becht *et al.* (2017) further support this finding by concluding that takeovers are the most popular activist engagement. The findings of this study suggest that hedge fund activists who do not use derivatives increase the probability of takeover of their target companies, thereby indicating that derivatives are ineffective financial instruments while undertaking activist engagements.

The rest of this chapter is structured as follows. Section 5.2 reviews relevant literature. Section 5.3 states the testable hypotheses. Section 5.4 describes the sample as well as the methodology used for various empirical analyses. Section 5.5 provides empirical results and discussion. Finally, Section 5.6 concludes the chapter.

5.2.Review of Literature

Brav *et al.* (2008) pioneered the area of hedge fund activism to analyse the impact of hedge fund activism using a large sample over the period between 2001 and 2006. Their paper finds that hedge fund activists propose strategic, operational, and financial remedies with success or partial success in two-thirds of the cases.

He, Qiu and Tang (2014) study the impact of hedge fund activism on corporate innovation and find that innovative firms are as likely to be targeted by activist hedge funds as non-innovative firms. They also find that activist hedge funds generate positive abnormal returns to shareholders during a 5-year period following intervention, thereby concluding that activist hedge funds are no myopic investors and that they generate long-term benefits to shareholders by enhancing the output of their targets.

Furthermore, Bebchuk, Brav and Jiang (2015) test the empirical validity of the claim that interventions by activist hedge funds have a detrimental effect on the long-term interests of companies and their shareholders and find that the data does not support this claim.

In a nutshell, existing literature, as mentioned above and in Chapter 2, generally agrees on the meaningful efforts by hedge fund activists. However, as mentioned earlier in this thesis, very few studies examine the mechanism through which activist hedge funds create value. Greenwood and Schor (2009) attribute the positive abnormal returns of target firms around the time an activist discloses his/her stake to the ability of the activist to force the company to get acquired. This argument is further supported by Becht *et al.* (2017) who find that takeovers are the most profitable activist strategy.

Finally, Boyson, Gantchev and Shivdasani (2017) find that activism mergers are more likely when the activist hedge funds have a record of aggressive intervention, substantial prior

merger experience, or has switched from passive to activist ownership. They further find that value creation through activism mergers to have arisen from monitoring target management and this cannot be explained by bidder overpayment.

While this thesis has contributed further to understanding the mechanisms through which hedge fund activists create value, and while this thesis provides comprehensive evidence on the ability of hedge fund activists to create long-term value as well as their superiority compared to other shareholder activists (Chapter 4), from a policy perspective, it is important to understand why regulators and politicians need to be cautious when deciding to regulate hedge fund activists.

By studying the role one of hedge funds' favourite tools, financial derivatives (which are often considered to be financial weapons of mass destruction) in shareholder activism, this study aims to contribute, from a policy perspective, by helping to understand whether the use of derivatives while undertaking activist engagements create or destroy value.

Hu and Black (2007) find that hedge funds routinely use leverage and options to increase their effective ownership in target firms. They find that decoupling votes and shares using equity derivatives and other capital market developments is efficient. They also find that hedge funds hold more votes than economic ownership (a situation knows as "empty voting") while at other times they hold undisclosed economic ownership without votes, but often with the *de facto* ability to acquire votes if needed (a situation known as "hidden ownership").

The study by Hu and Black (2007) suggests that it is possible that derivatives can play an important role in the success of activist campaigns. However, just because an activist hedge fund manages to succeed in creating the necessary changes using derivatives does not imply that it results in value creation. As a result, it is important to understand whether the role of

derivatives in hedge fund activism creates value to the target firms. This is the main objective and the main contribution of this chapter.

5.3.Testable Hypotheses

The main objective of this chapter is to answer the following three research questions: (1) Do hedge fund activists, using derivatives, create more value for their targets?; (2) Does the use of derivatives reduce the share price volatility of targets of hedge fund activists?; and (3) Does the use of derivatives increase the probability of takeovers involving hedge fund activists? The testable hypotheses are constructed accordingly.

The first testable hypothesis is constructed as follows:

H1: *Hedge Fund Activists Created Short-Term and Long-Term Value to Target Firms Using Derivatives*

Testing H1 helps to contribute to understanding why activist hedge funds rarely used derivatives (Partnoy (2015)). H1 is tested from the perspective of market reaction, that is, it will help one to understand the market reaction when hedge fund activists using derivatives disclose their stake in the target firms. It would also help to examine whether the market has high expectations about those activist hedge funds who use derivatives to achieve a successful activist engagement.

If activist hedge funds, who use derivatives to acquire a stake in the target firm, create short-term value and/or long-term value for their targets, then it should encourage more activist hedge funds to use derivatives. Furthermore, it should encourage policymakers to adopt a more cautious approach towards regulating hedge fund activists, especially with respect to their flexibility.

On the contrary, if activist hedge funds do not create any value by using derivatives, then it will not only justify why only few activist hedge funds use derivatives but also provide enough justification for policymakers to regulate activist hedge funds, especially from their flexibility perspective.

The second hypothesis is constructed as follows:

H2: *The Use of Derivatives has a positive influence on the Share Price Volatility of Target of Hedge Fund Activists*

Existing literature has found that using derivatives results in a decrease in the volatility of underlying stocks. For instance, Skinner (1989) examines the variance of returns on common stocks around the time exchange-traded options on these stocks. He finds that the variance of the stock returns decreases by an average of 4.8% as a result of options on those stocks. Stock market trading volume is also found to have increased, on average, post the listing of options on firms' stocks. There is little direct evidence for the hypothesis that the variance changes are related to changes in 'trading noise' in the stock.

Conrad (1989), using a sample from 1974 to 1980, investigates the price effect of option introduction. There is a permanent increase in the underlying security after the introduction of individual options, starting approximately three days before introduction. It is also found that the variance on excess stock returns reduces from 2.29% to 1.79% for 200 days after their listing because of derivatives. The systematic risk is also found to be unchanged and there is a positive relationship between the price increase and a measure of activity in the options market.

Bansal, Pruitt and Wei (1989) investigate the impact of Chicago Board Options Exchange (CBOE) option initiation on the price volatility and trading volume of the underlying equities.

They find that option listing cause a decrease in the total risk of optioned firms. More specifically, they find that the volatility of the underlying equities has reduced by 6.4% after options are listed. Total trading volume is found to have increased following option listing. However, they note that securities listed after 1980 show smaller increases in volume than those listed in the early years of options trading.

Overall, the aforementioned studies imply that there is a decrease in the volatility of the underlying equities as a result of derivatives.

Therefore, testing H2 examines whether hedge fund activists are able to reduce idiosyncratic volatility by using derivatives because if they do, then it highlights the importance of derivatives in hedge fund activism. It will also contribute towards existing literature that examines the relationship between derivatives and volatility.

The third and final testable hypothesis is constructed as follows:

H3: *Hedge Fund Activists Increase the Probability of Takeovers of Target Firms Using Derivatives*

Greenwood and Schor (2009) show that the positive abnormal returns realized by activist targets are due to the ability of the activist to force the company to be acquired. Becht *et al.* (2017) further reaffirm this finding.

Exercising derivatives would enable the activist to gain more shares, thereby gaining more voting power. As a result, there is a greater probability of takeovers initiated by hedge fund activists. Testing H3 will then help to understand the magnitude of importance while undertaking one of the most popular and profitable activist strategies, which is, mergers and acquisitions.

5.4.Data and Methodology

5.4.1. Data

5.4.1.1.Derivatives Sample

The central shareholder activism database (CSAD), constructed by hand-collecting SC 13D filings from SEC's EDGAR database, is used to construct the sample of hedge fund activist engagements.

As mentioned earlier, every institutional manager, including an activist hedge fund, has to file a Schedule 13D filing with the Securities and Exchange Commission (S.E.C.), if he/she acquires more than 5% of a publicly listed firm. These documents are required to be filed within 10 days post the purchase of the company's securities (Greenwood and Schor, 2009).

The SC 13D filings outline the size of the purchase and summarize the activist investor's intentions. Since 2000, it has been common for an activist to attach a letter to the target firm's management or board within their SC 13D filing (Greenwood and Schor, 2009).

Each SC 13D filing contains eight items. While "Item 4: Purpose of Transaction" outlines the intention of the activist, the most important sections for this study are "Item 1: Security and Issuer," which outlines the type of security purchased, including any derivative contracts, "Item 3: Source and Amount of Funds or other consideration," which outlines the source and the amount of funds for each activist effort, and "Item 5: Interest in the Securities of the Issuer," which outlines the voting rights of the activist, and other security-related information. There is also an additional section titled "Item 6: Contracts, Arrangements, Understandings, or Relationships with Respect to Securities of the Issuer," which outlines any underlying derivative contracts, or other arrangements made by the activist pertaining to the target firm.

The hedge fund activist database for this study is constructed as follows: First, the list of activists is recorded from the Thomson Reuters Shareholder Activism Intelligence database. The SEC's EDGAR database is then accessed and the initial Schedule 13D filings of each activist are documented and a database is constructed using Microsoft Excel.

Each Schedule 13D filing consists of eight items. All eight items are recorded and based on "Item 4: Purpose of Transaction," the activist demands are classified and recorded. Each activist's website is then visited and the type of Activist is recorded. In the event that the type of activist is not clear, websites such as WhaleWisdom are utilized to identify the type of activist. This is done, especially in the case of hedge fund activists.

The hedge fund activist sample for this study consists of 3,806 Schedule 13D filings, which are filed by 290 activist hedge funds for a period spanning from 1994 to 2014. By examining Items 1, 3, 5, and 6 of each Schedule 13D filing of hedge fund activists, it is found that there are 280 activism events where hedge fund activists use derivatives[16]. The distribution of hedge fund activist engagements, where the hedge fund activists use derivatives, by year, is outlined in Table 5.1.

(Insert Table 5.1 about here)

As evidenced in Table 5.1, there is a major drop in the use of derivatives in the years 2008, 2009, and 2010. This suggests that the decision to use derivatives is heavily influenced by the 2007 financial crisis. An increase in the use of derivatives in the years 2013 and 2014 suggests that derivatives are once again becoming popular among activist hedge funds post the financial crisis.

[16] The derivatives mainly considered in this chapter are options, futures, and forwards

After accounting for stock price information from CRSP and accounting information from Compustat, the final sample of hedge fund activists who employed derivatives for their activist campaigns consists of 175 activism events.

A reason for the low sample could be because most hedge fund activists aim to be more pro-active in their activist engagements instead of adopting a "wait-and-watch" approach by purchasing derivatives.

5.4.1.2.Matching Sample

A matching sample is also constructed to prevent sample bias while analysing the short-term and long-term market reaction. The matching sample is constructed from the sample of activist engagements by hedge fund activists who do not use derivatives and it is constructed based on year, targets' size, and targets' market-to-book ratio.

More specifically, in each industry and calendar year, the targets are classified into quintiles based on their market values and in each quintile; the targets are sorted based on their market-to-book value ratios. Targets of hedge fund activists who do not use derivatives while acquiring their stake for activist campaigns, whose market-to-book ratios are close to those targets of hedge fund activists who used derivatives were selected as the matching sample.

The matching sample consists of 241 activist campaigns where the hedge fund activists do not acquire their stake in the target by employing derivatives.

5.4.2. Methodology

5.4.2.1.Cumulative Abnormal Returns

The gains experienced around the time hedge fund activists, who employed derivatives, disclosed their stakes, are examined by computing cumulative abnormal returns (CARs).

According to Moeller, Schlingemann and Stulz (2004), the most traditional measure of announcement period excess returns is to compute abnormal percentage returns using standard event study methods. These abnormal returns are computed over an 11[17]-day event window [-5, +5].

The announcement period excess returns are computed using the market model, as shown in equation (5.1):

$$AR_{it} = R_{it} - (\alpha + \beta r_{mt}), t = 1, 2, \dots T \qquad (5.1)$$

Where, AR_{it} is the abnormal return of the activist target company i on day t; R_{it} is the return of the target company i on day t, and r_{mt} is the market return on day t (market return is measured by CRSP value-weighted index return).

For robustness check, the announcement period excess returns are also measured using the market-adjusted model.

The excess returns of the target companies around the time when hedge fund activists disclose their stakes is the sum of the abnormal returns over the 11-days (-5 to +5) surrounding the announcement day of the activist engagement, as shown in equation (5.2):

$$CAR_i = \sum_{t=-5}^{t=+5} AR_{it} \qquad (5.2)$$

5.4.2.2.Buy and Hold Abnormal Returns

[17] Cumulative abnormal returns are also computed over a 3-day [-1, +1] event window and over a 5-day [-2, +2] event window.

To examine the long-run announcement period gains of both targets of hedge fund activists who employ derivatives and targets of hedge fund activists who do not employ derivatives, the buy and hold abnormal returns (BHARs) are computed and analysed.

The methodology of Liang (2008) is followed to compute the buy and hold abnormal returns, as shown in equation (5.3):

$$BHAR_{iT} = \prod_{t=1}^{t=T}(1 + r_{it}) - \prod_{t=1}^{t=T}(1 + r_{mt}) \qquad (5.3)$$

Where r_{it} is the monthly stock return of firm i on month t and r_{mt} is the market return on month t.

The mean BHAR over a period T is:

$$BHAR_T = \frac{1}{n}\sum_{i=1}^{i=n} BHAR_{iT} \qquad (5.4)$$

5.4.2.3.Univariate Analysis

The impact of hedge fund activists, who employ derivatives to acquire stakes, on the announcement period gains of their target firms is analysed by first computing the difference between the cumulative abnormal returns of targets of the derivative sample and the cumulative abnormal returns of targets of the matching sample and then using the standard two-sided t-test to examine the statistical significance of the difference.

5.4.2.4.Multivariate Analysis

To examine the influence of derivatives on the cumulative abnormal returns, the 11-day cumulative abnormal returns (CARs) are regressed against a set of control variables, based on the methodology of Moeller, Schlingemann and Stulz (2004), as shown by equation (5.5):

$$CAR_i = \alpha + \beta_1 Derivative + \beta_2 Ln(MV)_i + \beta_3 \left(\frac{M}{B}\right)_i + \beta_4 Leverage_i + \beta_5 \left(\frac{CF}{E}\right)_i + \beta_6 Cash_i + \beta_7 \left(\frac{P}{E}\right)_i + f_t + \varepsilon_{it} \quad (5.5)$$

The dependent variable in equation (5.5) is the 11-day CARs computed using the market model. The key variable of interest is the *Derivative* dummy variable that takes the value of one for targets of hedge fund activists who employ derivatives and zero for targets of hedge fund activists who do not employ derivatives to acquire stakes in their target firms. All other control variables are explained in Appendix 5A. Equation (5.5) also accounts for year-fixed effects.

To examine whether employing derivatives have a positive impact on the probability of takeovers initiated by hedge fund activists, a probit model is employed, as shown by equation (5.6):

$$Acquired = \alpha + \beta_1 Derivative + \beta_2 Ln(MV)_i + \beta_3 \left(\frac{M}{B}\right)_i + \beta_4 Leverage_i + \beta_5 \left(\frac{CF}{E}\right)_i + \beta_6 Cash_i + \beta_7 \left(\frac{P}{E}\right)_i + \varepsilon_{it} \quad (5.6)$$

The dependent variable in equation (5.6) is the *Acquired* dummy variable that takes the value of one for targets that are acquired and zero for targets that remain independent following a hedge fund activist campaign. The key variable of interest is once again the *Derivative* dummy variable that takes the value of one for hedge fund activists who employ derivatives and zero otherwise. All other control variables are explained in Appendix 5A.

5.4.2.5.Measuring Idiosyncratic Volatility

The idiosyncratic price volatility of the targeted stocks by the activist hedge funds is examined to reveal the possible impact of the derivatives on the market reaction as well as on the volatility of stock prices around the time when the hedge fund activist discloses his/her stake in the target firm.

To measure the idiosyncratic volatility, the methodology of Bali and Cakici (2008) is followed. Idiosyncratic volatility is computed using three steps, as discussed below:

Step 1: The return of each stock is assumed to be driven by a common factor and firm-specific shock ε_i. Assuming a single factor return generating process, idiosyncratic volatility is measured relative to the traditional Capital Asset Pricing Model (CAPM), as shown by equation (5.7):

$$R_{it} - r_{ft} = \beta_{it}(R_{mt}) + \varepsilon_{it} \qquad (5.7)$$

Where R_{it} is the return on stock i, R_{mt} is the market return, r_{ft} is the risk-free rate and ε_{it} is the idiosyncratic return.

Step 2: The market model is estimated, as shown by equation (5.8):

$$R_{it} = \alpha_{it} + \beta_{it}(R_{mt}) + \varepsilon_{it} \qquad (5.8)$$

Step 3: The idiosyncratic volatility of stock i is measured as the standard deviation of the residuals:

$$IVOL_{it} = \sqrt{var(\varepsilon_{it})} \qquad (5.9)$$

5.5.Empirical Results and Discussion

5.5.1. Summary Statistics

Table 5.2 outlines the summary statistics of characteristics of targets of hedge fund activists, who employ derivatives while acquiring their stake as well the summary statistics of the characteristics of targets of hedge fund activists, who do not employ derivatives, while acquiring their stake (matching sample).

As evidenced from Table 5.2, hedge fund activists, who employ derivatives while acquiring their stake, target large-sized companies, on average. This could be because activist hedge funds prefer "hidden (morphable) ownership," (Hu and Black, 2007).

(Insert Table 5.2 about here)

Large sized companies have many shareholders and it is, therefore, much more difficult to pursue activism with regards to these companies. As a result, hedge fund activists could opt for holding undisclosed economic ownership without votes, but often with the *de facto* ability to acquire votes, if needed, using derivatives. This situation is known as "hidden (morphable) ownership (Hu and Black, 2007).

5.5.2. Analysis of Gains to Targets of Hedge Fund Activists Employing Derivatives

5.5.2.1.Analysis of Cumulative Abnormal Returns

In this section, the reaction of the market towards the disclosure announcement by hedge fund activists who employed derivatives is examined and is compared to the market reaction towards the disclosure announcement by hedge fund activists who do not employ derivatives. The results of the univariate analysis of the 11-day CARs of the derivative sample and of the matching sample are displayed in Table 5.3.

As evidenced from Table 5.3, the market reacts positively both when hedge fund activists, who employ derivatives, disclose their stakes in their targets and when hedge fund activists, who do not employ derivatives, announce their stakes in their targets. However, the gains are larger in the case where hedge fund activists do not employ derivatives. On average, targets of hedge fund activists who do not employ derivatives outperform targets of hedge fund activists, who employ derivatives while acquiring their stake, by 3.54% and the difference is statistically significant at the 1% level.

(Insert Table 5.3 about here)

Purchasing derivatives grant the hedge fund activist the rights to purchase the target's shares at a future date. The market, therefore, might treat these hedge fund activists as being hesitant towards undertaking the activist engagements. Alternatively, the market might also assume that the hedge fund activists, who acquire stakes by purchasing derivatives, do not possess the necessary ownership to successfully pursue the activist engagement.

On the contrary, those hedge fund activists who do not employ derivatives to acquire stakes in their target, purchase the shares directly, and are, therefore, capable of immediately negotiating with the target's management. Hence, the market might value their "confidence" more than the hedge fund activists who adopt a "wait-and-watch" approach by employing derivatives, and this could be the reason behind the targets of the matching sample outperforming the targets of the derivative sample.

Analysis of the gains in a multivariate setting further justifies this result. The 11-day cumulative abnormal returns (CARs) are regressed against a set of control variables. Table 5.4 outlines the results.

As evidenced from Table 5.4, the key variable of interest, that is, the *Derivative* dummy variable (that takes the value of one for targets of hedge fund activists who employ derivatives) is negative and statistically significant at 1% level across all four specifications. More specifically, after accounting for control variables, targets of hedge fund activists, who do not employ derivatives, are found to have outperformed targets of hedge fund activists, who employ derivatives by 3.95%.

(Insert Table 5.4 about here)

Overall, this finding provides the first contribution towards understanding the role of derivatives in hedge fund activism. It is found that the market awards those hedge fund activists who purchase the shares directly compared to those activist hedge funds who adopt a "wait-and-watch" approach.

In the analysis of cumulative abnormal returns, the 3-day and 5-day event windows are also considered for both the univariate and multivariate analyses. The univariate analysis shows that the difference between the CARs of the derivative sample and matching sample are insignificant for both the 3-day and 5-day event windows. Similar results are observed in the multivariate setting. Given the insignificance of the results, these are not reported in both Table 5.3 and Table 5.4.

5.5.2.2.Analysis of Buy-and-Hold Abnormal Returns

This section analyses the long-run market reaction towards targets of hedge fund activists, who employ derivatives. More specifically, this section analyses whether hedge fund activists who employ derivatives create long-term value compared to those hedge fund activists who do not employ derivatives. In other words, this section examines whether the "wait-and-watch" approach of hedge fund activism has a positive long-term impact.

Table 5.5 provides the results of the analysis that compares the 6-month, 12-month, and 24-month buy-and-hold abnormal returns of targets of hedge fund activists, who employ derivatives, with the 6-month, 12-month, and 24-month buy-and-hold abnormal returns of targets of hedge fund activists who do not employ derivatives.

As evidenced from Table 5.5, while the targets of the matching sample outperform the targets of the derivative sample across all three event windows (6 months, 12 months, and 24 months), the difference is statistically insignificant for all three event windows.

(Insert Table 5.5 about here)

Furthermore, the individual buy-and-hold abnormal returns of both samples across all event windows are also not statistically significant. Therefore, it can be inferred that using derivatives does not create any additional, significant long-term value.

5.5.3. Analysis of Idiosyncratic Volatility

This section compares the idiosyncratic volatility prior to and after the hedge fund activists disclosed their stake in their target firms. More specifically, the idiosyncratic volatility prior to and after the hedge fund activists disclose their stake in their target firms is computed for both the derivative sample and for the matching sample. Table 5.6 outlines the results.

As evidenced from Table 5.6, both hedge fund activists who employ derivatives and those hedge fund activists who do not employ derivatives reduce the idiosyncratic volatility of their target firms' stocks. More specifically, while targets of hedge fund activists who employ derivatives reduce the idiosyncratic volatility, on average, by 0.52% (statistically significant at 5% level), targets of hedge fund activists who do not employ derivatives are found to have reduced the idiosyncratic volatility, on average, by 0.95% (statistically significant at 1%

level). In other words, the reduction in idiosyncratic volatility is found to be greater for target firms of hedge fund activists who do not employ derivatives while acquiring their stakes.

(Insert Table 5.6 about here)

Past studies have found that the use of derivatives results in a decrease in the volatility of underlying stocks. Skinner (1989) found that the variance of the stock returns decreases by an average of 4.8% as a result of options on those stocks.

Conrad (1989) finds that the variance on excess stock returns reduces from 2.29% to 1.79% for 200 days after their listing as a result of derivatives.

Bansal, Pruitt and Wei (1989) conclude that there is a reduction in volatility by 6.4% after options are listed.

The findings of this study, that is, a reduction in idiosyncratic volatility, is, therefore, consistent with the aforementioned findings and suggests that activist hedge funds employ derivatives to drive down the volatility associated with the underlying stocks of the target firms. However, the finding that hedge fund activists, who do not employ derivatives, while acquiring their stake, reduce the idiosyncratic volatility by a larger extent further contributes towards understanding the role of derivatives by suggesting that the use of derivatives do not result in any additional value creation.

5.5.4. Hedge Fund Activism, Derivatives, and Takeovers

This section examines whether acquiring stakes by employing derivatives enables activist hedge funds to increase the probability of the sale of their targets. Greenwood and Schor (2009) find that the positive abnormal returns experienced around the time the activist discloses its stake in the target are attributed to the ability of activists to push for the sale of

the target. This argument is further reaffirmed by the findings of Becht *et al.* (2017), who find that activist-initiated takeovers are the more profitable and popular activist strategies.

The findings of Hu and Black (2007) suggest that hedge funds, whether traditional or activist, routinely employ leverage and options to increase their effective ownership stakes in target firms. Increased ownership implies increased voting power and therefore, employing derivatives could increase the probability of a successful activist campaign. Since mergers and acquisitions are one of the most popular strategies of hedge fund activism, there is a possibility that hedge fund activists will employ derivatives, while acquiring stakes in their target firms, to increase their voting power in order to increase the probability of the sale of their target firms. This section examines this argument.

5.5.4.1.Takeover Sample

To analyse whether hedge fund activists increase the probability of mergers and acquisitions by employing derivatives, the central shareholder activism database (CSAD) is first filtered to include only hedge fund activism campaigns and is then merged with the Thomson One Banker Mergers and Acquisitions database to obtain the number of deals with hedge fund activist involvement, irrespective of whether the activist hedge fund employ derivatives or not.

Following the methodology of Greenwood and Schor (2009), only those deals that occur within 18 months after the hedge fund activist discloses its stake are considered for the analysis. The hedge fund activist-initiated takeover sample consists of 178 deals and includes both targets where hedge fund activists employ derivatives while acquiring their stake and targets where hedge fund activists do not employ derivatives while acquiring their stake.

Table 5.7 outlines the distribution of the hedge fund activist-initiated deals. Panel A of Table 5.7 outlines the distribution of deals by year and Panel B of Table 5.7 outlines the distribution of deals by industry. Panel C of Table 5.7 outlines some key deal characteristics.

(Insert Table 5.7 about here)

To analyse whether employing derivatives while acquiring their stake play a positive role in increasing the probability of mergers and acquisitions, the Probit model, as shown by equation (5.6), is estimated. The results are shown in Table 5.8.

As evidenced from Table 5.8, the key dummy variable *Derivative* is negative and significant, thereby implying that hedge fund activists, who do not employ derivatives, while acquiring their stakes, increase the probability of the sale of their targets. This could be yet another reason why activist hedge funds are found to have rarely used derivatives (Partnoy, 2015).

(Insert Table 5.8 about here)

One of the reasons for the reduced probability of mergers and acquisitions while employing derivatives could be because of the difference in target size. As mentioned earlier, it is found that hedge fund activists who do not use derivatives target firms of smaller size. The ease of pushing for a sale of target of smaller size could prevent activist hedge funds to pursue employing derivatives while acquiring the stake in their targets. The inverse relationship between target size and the probability of mergers and acquisitions, as evidenced in Table 5.8, supports this theory. In other words, given that the target size is small and given that such targets are more prone to takeovers, there is no reason for hedge fund activists to use derivatives to pursue mergers and acquisitions.

Finally, this result also justifies why targets of hedge fund activists who do not employ derivatives, while acquiring the stake, experience a higher market reaction (that is,

outperform) targets of hedge fund activists who employ derivatives while acquiring the stake. As mentioned earlier, Greenwood and Schor (2009) attribute the abnormal returns around the time an activist discloses his/her stake to the ability of the activist to force the sale of the target. Since this study finds that hedge fund activists who do not employ derivatives, while acquiring the stake, increases the probability of takeovers, the market reaction is more positive for the targets of these hedge fund activists.

5.6.Conclusion

This chapter examines the role of derivatives in hedge fund activism. With regulators circling around to attack the flexibility of activist hedge funds while undertaking activism campaigns, and curtail their use of leverage and derivatives, it has become important to fully understand whether the use of derivatives creates value or destroys value. By analysing a sample of hand-collected hedge fund activist engagements, this chapter examines the impact of employing derivatives on the ability of hedge fund activists to create value.

Several findings emerge. First, both the targets of hedge fund activists who employ derivatives while acquiring their stake as well the targets of hedge fund activists who do not employ derivatives while acquiring their stake in the target firms receive positive market reaction around the time they announce their disclosure. However, targets of hedge fund activists who do not employ derivatives outperform the targets of hedge fund activists who employ derivatives. More specifically, the 11-day cumulative abnormal returns of targets of hedge fund activists who purchase the shares in open market exceed the 11-day cumulative abnormal returns of the targets of hedge fund activists who acquire their stake by acquiring derivatives by 3.54% and the result is statistically significant at 1% level. This suggests that the market has higher confidence in hedge fund activists who do not employ derivatives since these activists increase their ownership of their targets by directly purchasing shares in the

open market compared to those hedge fund activists who adopt a “wait-and-watch” approach by acquiring derivatives.

Second, the analysis of buy-and-hold returns of both the targets of hedge fund activists who employ derivatives and that of the targets of hedge fund activists who do not employ derivatives suggests that while the use of derivatives does not destroy value in the long term, it doesn’t create any additional value either. This is evident when the difference between the buy-and-hold returns of the targets of both the hedge fund activists who employ derivatives and of the hedge fund activists who do not employ derivatives is statistically insignificant.

Third, it is found that while both the targets of hedge fund activists who employ derivatives and the targets of hedge fund activists who do not employ derivatives experience a reduction in the idiosyncratic volatility of their share prices, the latter experience a higher reduction in idiosyncratic volatility. However, once again, despite the underperformance, there is no evidence of derivatives destroying the value of the activist targets. It is also consistent with the previous studies, who find that stock price volatility is reduced due to the use of derivatives.

Finally, this study examines whether adopting the “wait-and-watch” approach of hedge fund activists, by acquiring stakes in their targets through derivatives, increases the probability of the sale of the targets. It finds that hedge fund activists, who do not use derivatives, while acquiring their stake, increase the probability of the sale of their targets compared to those hedge fund activists who employ derivatives while acquiring their stake. This finding further justifies as to why targets of hedge fund activists who do not employ derivatives outperform targets of hedge fund activists who employ derivatives.

Overall, this chapter further justifies why activist hedge funds rarely used derivatives (Partnoy, 2015). While there is a positive reaction around the time of activist disclosure, and

while employing derivatives does result in a reduction of idiosyncratic volatility of the share prices of their targets, activist hedge funds who employ derivatives do not create any additional value compared to activist hedge funds who do not employ derivatives. On the contrary, the targets of the former underperform the targets of the latter, thereby implying that hedge fund activists are better off by directly purchasing shares of the targets that they believe are undervalued.

This paper makes several contributions to the existing literature on hedge fund activism. First, this is the first study that examines the role of derivatives in hedge fund activism in a comprehensive manner. Second, this paper studies the impact of using derivatives while undertaking activist engagements. While targets of hedge fund activists, who do not employ derivatives while acquiring their stake, experience higher abnormal returns and experience a higher reduction in idiosyncratic volatility compared to targets of hedge fund activists who employ derivatives while acquiring their stake, there is no evidence of hedge fund activists destroying value by employing derivatives. This is a key finding, especially since it has a critical policy implication.

One of the provisions of the now-failed Brokaw Act is to expand the concept of beneficial ownership to include more derivatives (Brav, Heaton and Zandberg, 2018). By examining the impact of standard derivatives such as options, futures, and forwards, this study finds that using these derivatives does not result in any value destruction. Combine this with the key finding of Chapter 4, that is, hedge fund activists are more than capable of creating positive long-term value, it sends a clear message to policymakers: be cautious while setting out to regulate activist hedge funds.

The interventionist tactics of hedge fund activists combined with their flexibility to use leverage and derivatives are what makes them efficient activists. Curtailing their powers

without studying the full implications would only be detrimental, not only to shareholder activism but also to the firms who are targets of shareholder activism. This is the key message of this study.

While this paper mainly focuses on options, futures, and forwards as the derivative instruments used by activist hedge funds, in my future research, I intend to explore the use of other derivative instruments, such as credit default swaps, by activist hedge funds and its impact on situations related to firm bankruptcy. Subrahmanyam, Tang, and Wang (2014) examine the effect of credit default swaps on credit risk and find that the credit risk of reference firms increases significantly upon the inception of CDS trading. This is also evident in the bankruptcy talks between Caesars Entertainment Corp. and activist hedge fund Elliot Management Corp (Keller, 2014). My future research also intends to examine whether hedge fund activists use such instruments and their impact when they target financially distressed firms.

CHAPTER 6 – CONCLUSION

This thesis is an attempt at bridging some of the existing gaps and aims to contribute towards existing literature on hedge fund activism. More specifically, this thesis attempts to provide more insight into the spillover effects of shareholder activism in general, and hedge fund activism in particular. Furthermore, this thesis also attempts to contribute towards understanding the long-term impact of hedge fund activism, with respect to their target firms, as well as with respect to the ability of other shareholder activists. Finally, this thesis also attempts to study the role of financial instruments used by hedge funds in activist campaigns and analyses whether the "freedom" enjoyed by hedge funds, irrespective of whether they are traditional or activist, needs to be curtailed.

The core of this thesis consists of three chapters. Chapter 3 explores the spillover effects of shareholder activism. More specifically, it explores the spillover effects of shareholder activism on acquiring firms participating in acquisitions initiated by shareholder activists. This chapter examines whether firms that acquire targets of shareholder activism are able to outperform acquirers of firms who are not targeted by shareholder activists. Using a sample of US domestic activist-initiated mergers and acquisitions over the period 1994-2014, this chapter primarily explores whether acquirers benefit from activist-initiated acquisitions, both in the short term and in the long-term.

Several findings emerge in Chapter 3. First, the acquirers of activist targets outperform acquirers of firms that are not targeted by any activist, on the announcement of takeover deals. More specifically, after controlling for the firm and deal- specific characteristics, acquirers of targets of activist-initiated acquisitions outperform activists of non-activist targets by about 2% on the announcement of the takeover deal. This return is found to have

translated into a $334 million gain to an average acquirer. In a nutshell, this result provides the first glimpse of evidence that shareholder activism has a positive spillover effect on firms that are not activist targets.

However, analysis of long-term market reaction finds that the performance of acquirers is not significantly dependent on the presence (or lack of) activists, that is, the acquirers participating in activist-initiated acquisitions gain as much as the acquirers participating in acquisitions that are not driven by shareholder activists.

Second, target firm shareholders gain, irrespective of the presence or absence of activism, that is, the gains to target firm shareholders remain independent of activism. Unlike the suggestions of some previous studies, this evidence implies that targets are not required to be sold to a bidder to realize the gains of activism. In other words, it is possible that the market price of firms that are subjected to activism is already reflecting the enhanced quality of the firm. This evidence, combined with the evidence from a comparative analysis of an alternative measure of bid premium, implies that acquirers do not overpay to acquire activist targets. On the contrary, they benefit more by acquiring activist targets compared to targets that are not subjected to shareholder activism.

Finally, the superior gains enjoyed by the acquirers of activist targets are largely driven by non-cash deals where the activists continue to hold their stakes in merged firms.

Overall, the findings of this chapter indicate that acquirers stand to benefit more by acquiring targets that are subjected to some form of shareholder activism compared to those acquirers who participate in acquisitions that are not driven by shareholder activists. This further implies that, from the perspective of target firms' shareholders, it is worthwhile to improve the quality of the firm before it is sold. Similarly, acquirers are better off by acquiring targets that have already gone through the quality improvement process and they stand to benefit

more when the shareholder activists are willing to retain their stakes in the merged firm by accepting a non-cash settlement.

Chapter 3 not only contributes by providing evidence of a positive spillover effect of shareholder activism but also provides a glimpse of the long-term game plan of shareholder activism. This is evident from the finding that the acquirer outperformance is mainly observed in non-cash deals, where the activist maintains his/her stake in the merged firms. However, Chapter 3 also suggests that more evidence is needed to support the efficiency of shareholder activism. This is because although activist targets receive a 20% premium on the announcement deal, the difference between activist premium and "non-activist" premium is insignificant. Furthermore, this chapter fails to explain the scenario when the target firm is too large to be acquired or the acquisition of the target could be affected by regulatory hurdles.

Overall, while there are positive signs related to the impact of shareholder activism, the results are not convincing enough to indicate that hedge fund activists are beneficial to the economy. There is also no evidence of hedge fund activists being superior to other shareholder activists, which further prevents from firmly establishing the efficiency of hedge fund activism.

These questions are answered in Chapter 4, which contribute by exploring an important value-creation channel by hedge fund activists: corporate divestitures. Chapter 4 evaluates whether hedge fund activists could be efficient, long-term value-creators, that is, "shepherds," and whether their expertise can benefit society. It also evaluates whether hedge fund activists are more superior to other shareholder activists, especially from the perspective of long-term value creation.

This chapter contains several important results. First, it finds that the interventionist tactics of hedge fund activists as well as their ability to form "wolf-packs" results in a faster resolution of hedge fund activist-initiated divestitures compared to those initiated by other shareholder activists.

Second, it finds that hedge fund activist-initiated divestitures outperform the divestitures initiated by other activists in the short run. More specifically, the 11-day cumulative abnormal returns of targets of hedge fund activist-initiated divestitures exceed the 11-day cumulative abnormal returns of targets of divestitures initiated by other shareholder activists by 2.30%.

Third, it finds that the long-term market reaction towards targets of hedge fund activist-initiated divestitures is superior compared to the long-term market reaction towards targets of divestitures initiated by other shareholder activists. Furthermore, it finds that, post the completion of the divestiture, the long-term operating performance and firm profitability are higher for targets of hedge fund activist-initiated divestitures compared to targets of divestitures initiated by other shareholder activists. More specifically, hedge fund activist-initiated divestitures result in an improvement in the ROA of the target firm by 14.21% and by 10.23%, two years and three years post the divestiture completion respectively, compared to targets of divestitures initiated by other shareholder activists. Firm profitability is found to have improved by 15.54% and by 8.45% for targets of hedge fund activist-initiated divestitures, two years and three years post the completion of the divestiture, compared to targets of divestitures initiated by other shareholder activists. The improved firm performance is attributed to the ability of hedge fund activists to increase managerial focus, thereby implying that they are efficient, long-term value-creators compared to other shareholder activists. Overall, the common theme that emerges is: *hedge fund activist-initiated*

divestitures steadily improve ROA and firm profitability, whereas targets of other activists experience deteriorating ROA and profitability in the long run.

Fourth, it finds that hedge fund activists do not employ divestitures as a tool to initiate a sale of their targets, thereby indicating that hedge fund activists are more than able to create tangible long-term value and are not just short-term players interested in stock price boosts.

Overall, it finds that hedge fund activists create tangible improvements in firm value through the resources channel (proposed by John and Ofek (1995) and Desai and Jain (1999) as well as through the corporate governance channel (proposed by Brav *et al.* (2008) and Boyson and Mooradian, 2011).

For a comprehensive understanding of the efficiency of hedge fund activism, Chapter 4 also looks at whether hedge fund activists prefer a type of divestiture as well as the impact of hedge fund activist-initiated divestitures on the target firms' bondholders. Analysis of the hedge fund activists' preference for divestitures finds that hedge fund activists increase the probability of spinoffs and this is attributed to the ability of hedge fund activists to resolve a spinoff demand faster compared to selloffs as well as to increase managerial focus. Analysis of the impact of hedge fund activist-initiated divestitures on bondholders found that, contrary to the findings of Klein and Zur (2011), hedge fund activist-initiated divestitures create value for shareholders and bondholders alike, thereby providing even more evidence that hedge funds are more efficient activists than other institutions such as pension funds and mutual funds.

Chapter 4 makes several important contributions to the existing literature on hedge fund activism. A new value-creation channel of hedge fund activism is documented in this chapter, that is, *improved managerial focus through divestitures*. It also finds that hedge fund activists, in addition to being efficient external monitors, also improve managerial focus

through corporate divestitures using interventionist tactics, thereby creating tangible long-term value. This study also contributes to the intense ongoing debate over the extent to which hedge fund activism is a critical problem for US public firms, their investors, and the economy in general.

Chapter 4 helps to provide the most concrete evidence that hedge fund activism is beneficial to the economy and contributes positively not just in the short-term, but also in the long-term. While Chapter 3 provides a glimpse of the ability of hedge fund activists to create long-term value, Chapter 4 cements the story: *hedge fund activism is beneficial to the economy*.

Since hedge fund activists are more than capable of creating positive long-term value, as well as since there was sufficient evidence of positive spillover effects of shareholder activism, attention switched towards providing further evidence that would encourage policymakers to take a more cautious approach towards regulating hedge fund activism. Chapter 5 explores the role of one of the most complex financial instruments used by hedge funds, financial derivatives, in hedge fund activism. The aim is to find evidence that would prevent policymakers from needlessly imposing stricter regulations on activist hedge funds.

Chapter 5 helps to contribute towards fully understanding whether employing derivatives for activist campaigns creates or destroys value. By analysing a sample of hand-collected hedge fund activist engagements, this chapter examines the impact of employing derivatives on the ability to create value. The analysis of Chapter 5 includes the impact of activist campaigns that employ derivatives on the short-term and long-term market reaction of their targets, on the idiosyncratic volatility of their targets, as well as on the probability of initiating a sale of the target.

Several findings emerge. First, evidence shows that around that time of activist disclosure announcement, both the 11-day cumulative abnormal returns of targets of hedge fund

activists who employ derivatives and the 11-day cumulative abnormal returns of targets of hedge fund activists who do not employ derivatives are positive and statistically significant. However, the targets of hedge fund activists who do not employ derivatives outperform the targets of hedge fund activists who employ derivatives by 3.54% and the result is statistically significant at the 1% level. This suggests that the market has higher confidence in hedge fund activists who do not use derivatives since these activists increase their ownership of their targets by directly purchasing shares in the open market compared to those hedge fund activists who adopt a "wait-and-watch" approach by acquiring derivatives.

Second, the analysis of buy-and-hold returns of both the targets of hedge fund activists who employ derivatives and that of the targets of hedge fund activists who do not employ derivatives suggest that while the use of derivatives do not destroy value in the long-term, it doesn't create any additional value either. This is evident when the difference between the buy-and-hold returns of the targets of both the hedge fund activists who employ derivatives and of the hedge fund activists who do not employ derivatives is statistically insignificant.

Third, the impact of employing derivatives on the idiosyncratic volatility of their targets is examined since previous studies have found that stock price volatility decreases due to the use of derivatives. It is found that although both hedge fund activists who employ derivatives and hedge fund activists who do not employ derivatives, while undertaking activist campaigns, reduce idiosyncratic volatility, there is a higher reduction of idiosyncratic volatility for targets of hedge fund activists who do not employ derivatives. This suggests that the use of derivatives does not have any additional impact on the activist targets.

Finally, it is found that hedge fund activists who do not use derivatives increase the probability of takeovers. This finding helps to understand the higher market reaction

observed for targets of hedge fund activists who do not employ derivatives while undertaking activist campaigns as well as why activist hedge funds rarely use derivatives (Partnoy, 2015).

Overall, this chapter contributes to understanding that although hedge fund activists are better off without using derivatives, there is no evidence of value destruction as a result of using derivatives. While there is a positive reaction around the time of activist disclosure, and while employing derivatives does result in a reduction of idiosyncratic volatility of the share prices of their targets, activist hedge funds who employ derivatives do not create any additional value compared to activist hedge funds who do not employ derivatives. On the contrary, the targets of the former underperform the targets of the latter, thereby implying that hedge fund activists are better off by directly purchasing shares of the targets that they believe are undervalued. However, given that hedge fund activists, who use derivatives, do not destroy value, it provides evidence that the flexibility of hedge fund activists is not detrimental. Policymakers are urged in treading with caution with regards to curtailing the "freedom" of hedge fund activists.

This chapter makes several contributions to the existing literature on hedge fund activism. First, this is the first study that examines the role of derivatives in hedge fund activism in a comprehensive manner. Second, this chapter sends a message to activist hedge funds that they are better off undertaking activist campaigns without employing derivatives. While the use of derivatives does not destroy value, it does not create any additional value either. Given the underperformance of targets of hedge fund activists who employ derivatives while undertaking activist campaigns, as well as given the reduced probability of a sale by employing derivatives, hedge fund activists are better off by not adopting a "wait-and-watch" approach while undertaking activist engagements. That said, given that use of derivatives does not destroy value, policymakers are warned that it would be futile to regulate activist

hedge funds with respect to the tools that they employ while undertaking activist engagements.

One of the provisions of the now-failed Brokaw Act was to expand the concept of beneficial ownership to include more derivatives (Brav, Heaton and Zandberg, 2018). By examining the impact of standard derivatives such as options, futures, and forwards, this study finds that using these derivatives does not result in any value destruction. Combine this with the key finding of Chapter 4, that is, hedge fund activists are more than capable of creating positive long-term value, it sends a clear message to policymakers: be cautious while setting out to regulate activist hedge funds.

The interventionist tactics of hedge fund activists combined with their flexibility to use leverage and derivatives are what makes them efficient activists. Curtailing their powers without studying the full implications would only be detrimental, not only to shareholder activism but also to the firms who are targets of shareholder activism. This is the key message of this study.

This thesis has several widespread implications, especially with respect to the role of hedge fund activism in corporate governance as well as with respect to regulating hedge fund activism. First, the findings of Chapter 3 provide a glimpse of the ability of activists to play the long-term game while undertaking activist campaigns, as evidenced from the gains to acquiring firms from non-cash deals. It further suggests that activists are more than happy to play a potential constructive role in the merged firm following the acquisition. Second, the findings of Chapter 3 also suggest that while firms do not need to be sold to realize the value of the firm or be the subject of activism, it is possible that the value created by activists' actions is already reflected in the market value of the target before the takeover deal is announced. As a result, the lack of difference in the premium cannot be used to challenge the

value creating ability of activism. Third, Chapter 3 also enhances the understanding of the ability of hedge fund activists to create value compared to other shareholder activists. While activist hedge funds do create value to acquiring firms, thereby providing evidence on the positive spillover effects of hedge fund activism, they are not found to be more efficient than other shareholder activists.

Fourth, based on Chapter 4 findings, the positive long-term impact of hedge fund activism becomes clearer. Using divestitures to improve managerial focus, hedge fund activists are found to have been more than capable of creating tangible long-term value and are not found to have sacrificed it for the sake of making a quick buck for their investors. The findings also provide sufficient evidence to convince policymakers and investors that value creation by hedge fund activism is not restricted to upticks in stock prices; hedge fund activists are in for the long haul. Moreover, it is better for other shareholder activists, such as mutual funds, to partner with hedge fund activists rather than undertake their own activist engagements, especially since activist hedge funds, unlike other shareholder activists, are free of any major conflicts of interest[18] and possess enough flexibility[19] to undertake campaigns that create long-term value.

Fifth, based on the findings of Chapter 5, hedge fund activism has an indirect positive effect on non-targets, especially if they are acquiring firms participating in activist-driven acquisitions. Furthermore, activist involvement is found to have improved median acquirer performance during the post-deal period, thereby providing the first indication that activists leave a positive long-term impact towards firms, irrespective of whether they are targets or not. Finally, keeping in line with the debate about the need for regulating hedge fund

[18] Unlike mutual funds, hedge funds have no obligations towards the management of the target firms whose shares they hold.
[19] Such as the use of leverage and options (Hu and Black, 2007).

activists, Chapter 5 provides more evidence suggesting that the flexibility of hedge fund activism has no adverse impact on their targets. By studying the role one of the most important weapons of hedge funds, derivatives, on activism campaigns, it is found that activist hedge funds achieve greater success and create more value when they do not employ derivatives while building their stake. This implies that activist hedge funds are better off without using derivatives, and as a result, spending considerable resources debating on regulating activist hedge funds because of their flexibility in using complex financial instruments appears pointless.

Hedge fund activism is here to stay. Activist hedge funds are in for the long-haul, and it is their flexibility and absence of conflicts that enable them to be effective long-term value creators. While there is no doubt that critics will continue to question their tactics and their short-termism, and since Brokaw Act may be the first but will definitely not be the last policy weapon against hedge fund activism, it is time for policymakers to carefully evaluate their goals.

Needlessly and aimlessly regulating hedge fund activism is not the answer. As evidenced from Chapter 4, the finding that hedge fund activists create long-term value whereas other shareholder activists destroy value is an example of how hedge fund activism needs its flexibility to create value. CEOs may not like them, but the interventionist tactics employed by activist hedge funds is precisely how they increase managerial focus, thereby improving the firm value that has benefits for the company shareholders, other stakeholders, and the economy, on a whole.

Furthermore, the findings of this thesis also urge other shareholder activists to partner with activist hedge funds rather than undertaking their own activist engagements, which has now been found out to be value-destroying.

Batman might have been the hero which Gotham deserved but did not need back then, but in a world where the next Enron and Lehmann Brothers lurk in the shadows, hedge fund activists are the heroes Capitalism deserves and needs today.

This thesis definitely has its limitations, which I plan to explore in my future research. First, in Chapter 4, only spinoffs and selloffs are analysed. In my future research, other types of divestitures, such as split-offs and carve-outs will be explored.

Second, I also plan to examine whether hedge fund activists reduce managerial overconfidence through divestitures, that is, exploring whether improved managerial discipline through hedge fund activist-initiated divestitures might serve to reduce managerial overconfidence.

Third, in Chapter 5, mainly options, futures, and forwards are used to explore the role of derivatives in hedge fund activism. While these are the most popular derivatives used by activist hedge funds, in recent times, other derivatives such as credit default swaps are gaining popularity among hedge fund activists. Therefore, I intend to explore the role of these derivatives in hedge fund activism and the impact they have on situations related to firm bankruptcy. Subrahmanyam, Tang, and Wang (2014) examine the effect of credit default swaps on credit risk and find that the credit risk of reference firms increase significantly upon the inception of CDS trading. This is also evident in the bankruptcy talks between Caesars Entertainment Corporation and activist hedge fund Elliott Management Corporation (Keller, 2014). Therefore, I intend to examine whether hedge fund activists use such instruments and their impact when they target financially distressed firms.

TABLES FOR CHAPTER 3

Table 3.1. Distribution of deals by year and activist type

This table presents deals with activist involvement from 1994 to 2014. Panel A reports the distribution of deals by sample year and Panel B reports distribution of deals by activist type[20].

Panel A: Annual Distribution of Deals with Activist Involvement

Year	No. of Deals	Percent (%)	Year	No. of Deals	Percent (%)
1994	2	0.63	2005	10	3.16
1995	2	0.63	2006	23	7.28
1996	10	3.16	2007	16	5.06
1997	20	6.33	2008	21	6.65
1998	24	7.59	2009	20	6.33
1999	20	6.33	2010	15	4.75
2000	15	4.75	2011	15	4.75
2001	16	5.06	2012	11	3.48
2002	9	2.85	2013	13	4.11
2003	13	4.11	2014	25	7.91
2004	16	5.06	**Total**	**316**	**100.00**

Panel B: Distribution of Deals by Activist Type

Activist Types	No. of Deals
Hedge Funds	192
Other Activists	169
Industrial Owners	68
Investment Managers	51
Individual Investors	18
Investment Companies	13
Financial Institutions	12
Private Equity Companies	4
Pensions Funds	3
Total	**361**

[20] The number of deals by activist group is greater than the number of deals in total because some deals involve multiple activists.

Table 3.2: Summary Statistics for the sample of M&A deals

This table presents summary statistics for the full sample of M&A deals, portioned by the deals with activist involvement and matching deals. Panel A, B and C show summary statistics for acquirer firm characteristics, target firm characteristics, and deal characteristics, respectively. All variables are defined in Appendix 3A. Continuous variables are winsorized at the 2% and 98% levels. P-Values are shown in parentheses. T-test and the Wilcoxon rank-sum test are used to test the difference in mean and median, respectively. Statistical significance at the 1%, 5% and 10% levels are denoted as ***, ** and * respectively.

	Full Sample			Activists Sample			Matching Sample			Difference (Activists – Matching)			
	Mean	Median	N	Mean	Median	N	Mean	Median	N	Mean	P-Value	Median	P-Value
Panel A: Acquirer Firm Characteristics													
MV ($ mil.)	16696.18	1843.67	675	14799.48	2139.30	316	18365.70	1706.35	359	-3566.22	(0.220)	432.95	(0.459)
M/B	4.12	2.41	675	3.91	2.39	316	4.32	2.41	359	-0.41	(0.322)	-0.02	(0.486)
Leverage	0.39	0.38	673	0.40	0.37	316	0.38	0.38	357	0.03	(0.213)	-0.02	(0.277)
Cash Flows/Equity	0.04	0.05	646	0.05	0.06	299	0.04	0.05	347	0.01	(0.416)	0.01*	(0.098)
RUNUP	0.15	0.10	675	0.18	0.13	316	0.13	0.08	359	0.05	(0.102)	0.05	(0.109)
Sigma	0.03	0.02	675	0.03	0.02	316	0.03	0.02	359	0.00	(0.495)	0.00	(0.471)
Panel B: Target Firm Characteristics													
MV ($ mil.)	1540.37	201.74	554	1404.12	213.75	273	1672.75	189.07	281	-268.64	(0.393)	24.68	(0.931)
M/B	2.48	1.78	502	2.50	1.75	249	2.47	1.78	253	0.03	(0.878)	-0.04	(0.811)
Leverage	0.37	0.36	559	0.38	0.35	276	0.36	0.36	283	0.02	(0.497)	0.00	(0.553)
Cash Flows/Equity	-0.03	0.04	480	-0.04	0.04	238	-0.03	0.05	242	-0.01	(0.826)	0.00	(0.654)
RUNUP	0.06	0.03	556	0.11	0.08	275	0.02	0.01	281	0.08**	(0.046)	0.07**	(0.019)
Sigma	0.04	0.03	567	0.04	0.03	281	0.04	0.03	286	0.00	(0.851)	0.00	(0.574)

	Full Sample			Activists Sample			Matching Sample			Difference (Activists – Matching)			
	Mean	**Median**	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**	**N**	**Mean**	**P-Value**	**Median**	**P-Value**
Panel C: Deal Characteristics													
TV ($ mil.)	1013.52	183.73	615	1055.19	233.34	286	977.31	162.79	329	77.88	(0.636)	70.55**	(0.028)
Relative Size	0.35	0.16	615	0.38	0.17	286	0.34	0.15	329	0.04	(0.319)	0.03	(0.215)
All-Cash (%)	39.89	-	569	44.61	-	269	35.67	-	300	8.94**	(0.030)	-	-
All-Stock (%)	29.17	-	569	24.91	-	269	33.00	-	300	-8.09**	(0.033)	-	-
Mixed (%)	30.93	-	569	30.48	-	269	31.33	-	300	-0.85	(0.827)	-	-
Incl. Stock (%)	60.11	-	569	55.39	-	269	64.33	-	300	-8.94**	(0.030)	-	-
Hostile (%)	5.04	-	675	6.96	-	316	3.34	-	359	3.62**	(0.036)	-	-
Competing Bid (%)	7.85	-	675	11.39	-	316	4.74	-	359	6.66***	(0.002)	-	-
Tender Offer (%)	16.00	-	675	19.94	-	316	12.53	-	359	7.40***	(0.010)	-	-
Diversification (%)	34.07	-	675	34.18	-	316	33.98	-	359	0.19	(0.958)	-	-
Completed Deal (%)	81.33	-	675	81.96	-	316	80.78	-	359	1.18	(0.694)	-	-

Table 3.3: Gains to Acquirers from M&A Deals

This table presents acquirers' short- and long-term gains. Panel A shows acquirers' announcement abnormal returns. CAR [-2, 2] is the 5-day market-adjusted cumulative abnormal returns around the announcements. Panel B shows acquirers' post-announcement long-term returns. BHAR24 is the 24-month buy-and-hold abnormal returns after the announcement. Variables are winsorized at the 2% and 98% levels. P-Values are shown in parentheses. T-test is used to test the significance of the mean, and the difference in the means. Wilcoxon signed-rank test and Wilcoxon rank-sum test are used to test the significance of median and the difference in medians, respectively. Statistical significance at the 1%, 5% and 10% levels are denoted as ***, ** and * respectively.

	Full Sample			**Activists Sample**			**Matching Sample**			**Difference (Activists – Matching)**			
	Mean	**Median**	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**	**N**	**Mean**	**P-Value**	**Median**	**P-Value**
Panel A: Acquirers' Announcement Abnormal Returns													
CAR [-2, 2] (%)	0.00	-0.15	675	0.78*	0.16	316	-0.69*	-0.35**	359	1.46**	(0.012)	0.51**	(0.034)
	(0.996)	(0.402)		(0.081)	(0.262)		(0.067)	(0.025)					
Panel B: Acquirers' Post-Announcement Buy-and-hold Returns													
BHAR24 (%)	16.90***	10.15***	574	20.83***	16.93***	256	13.74***	6.14**	318	7.10	(0.177)	10.79*	(0.088)
	(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.011)					

Table 3.4: Multivariate analysis of acquirers' announcement gains

Acquirers' announcement abnormal returns (CAR [-2, 2]) are regressed (OLS) against a set of explanatory variables (Activist dummy, acquirer firm characteristics and deal characteristics). All variables are defined in Appendix 3A. In all models, industry fixed effects and year fixed effects are controlled for. For brevity, their coefficients are not reported in the table. The number of observations used in different specifications may vary because of the missing value of one or more variable. All continuous variables are winsorized at the 2% and 98% levels. P-Values shown in parentheses are adjusted for heteroskedasticity and acquirer clustering. Statistical significance at the 1%, 5% and 10% levels are denoted as ***, ** and * respectively.

	(1)	(2)	(3)	(4)
Activist	0.0137**	0.0160**	0.0172***	0.0206***
	(0.022)	(0.010)	(0.009)	(0.002)
Ln (MV)		-0.0029		-0.0068***
		(0.110)		(0.001)
M/B		0.0009		0.0011
		(0.276)		(0.267)
Leverage		0.0110		0.0169
		(0.423)		(0.267)
CF/E		-0.0215		0.0279
		(0.592)		(0.487)
RUNUP		0.0013		0.0045
		(0.913)		(0.715)
Sigma		-0.2725		0.2003
		(0.483)		(0.627)
Relative Size			-0.0240***	-0.0411***
			(0.003)	(0.000)
Cash			0.0034	0.0055
			(0.634)	(0.470)
Hostile			-0.0108	-0.0154
			(0.460)	(0.335)
Tender Offer			0.0092	0.0105
			(0.257)	(0.207)
Competing Bid			-0.0017	0.0014
			(0.887)	(0.910)
Diversification			-0.0010	0.0013
			(0.886)	(0.859)
Constant	-0.0066	0.0146	-0.0323	-0.0373
	(0.807)	(0.706)	(0.179)	(0.437)
N	675	644	569	542
R^2	0.072	0.087	0.115	0.167
adj. R^2	0.025	0.030	0.051	0.093

Table 3.5: Methods of payment and acquirers' announcement gains

Acquirers' announcement period abnormal returns (CAR [-2, 2]) by the methods of payment are regressed (OLS) against a set of explanatory variables. All variables are defined in Appendix 3A. In all models, industry fixed effects and year fixed effects are controlled for. For brevity, their coefficients are not reported in the table. The number of observations used in different specifications may vary because of the missing value of one or more variable. All continuous variables are winsorized at the 2% and 98% levels. P-Values shown in parentheses are adjusted for heteroskedasticity and acquirer clustering. Statistical significance at the 1%, 5% and 10% levels are denoted as ***, ** and * respectively.

	Cash Only Deals				**Non-cash Deals**			
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
Activist	0.0094	0.0062	0.0081	0.0043	0.0177*	0.0243**	0.0196*	0.0259**
	(0.261)	(0.470)	(0.345)	(0.632)	(0.073)	(0.017)	(0.051)	(0.012)
Ln (MV)		-0.0052**		-0.0038		-0.0035		-0.0074**
		(0.047)		(0.196)		(0.233)		(0.015)
M/B		-0.0014		-0.0015		0.0030**		0.0025*
		(0.164)		(0.159)		(0.047)		(0.083)
Leverage		0.0323		0.0337		0.0052		0.0165
		(0.117)		(0.105)		(0.816)		(0.431)
CF/E		-0.0663		-0.0922		0.0106		0.0474
		(0.378)		(0.228)		(0.830)		(0.338)
RUNUP		0.0345*		0.0327*		-0.0124		-0.0063
		(0.054)		(0.064)		(0.451)		(0.681)
Sigma		-0.8379		-0.9386		0.2394		0.5878
		(0.224)		(0.208)		(0.674)		(0.285)
Relative Size			0.0220	0.0332			-0.0308***	-0.0488***
			(0.351)	(0.241)			(0.001)	(0.000)
Hostile			-0.0098	-0.0256			-0.0044	-0.0091
			(0.661)	(0.251)			(0.828)	(0.699)
Tender Offer			0.0016	0.0031			0.0068	0.0087
			(0.860)	(0.737)			(0.677)	(0.611)
Competing Bid			0.0062	0.0020			-0.0139	-0.0066
			(0.645)	(0.888)			(0.503)	(0.786)
Diversification			-0.0043	-0.0013			0.0051	0.0084
			(0.644)	(0.892)			(0.666)	(0.477)
Constant	-0.0044	0.1033**	0.0029	0.0432	-0.0225	-0.0455	0.0130	-0.0262
	(0.905)	(0.016)	(0.938)	(0.138)	(0.472)	(0.388)	(0.704)	(0.639)
N	227	219	227	219	342	323	342	323
R^2	0.147	0.216	0.158	0.233	0.103	0.142	0.150	0.225
Adj. R^2	0.012	0.056	-0.001	0.050	0.010	0.027	0.046	0.106

Table 3.6: Gains to Targets from M&A deals

This table presents the distribution of targets' gains. Panel A shows targets' announcement abnormal returns. CAR [-2, 2] is the 5-day market-adjusted cumulative abnormal returns around the announcements. CARs are winsorized at the 2% and 98% levels. Panel B shows Bid Premiums measured by difference between the offer price and the target stock price 4 weeks before the announcement divided by the latter. Bid Premiums are winsorized if values are beyond the range of [0, 2]. P-Values are shown in parentheses. T-test is used to test the significance of the mean, and the difference in mean. Wilcoxon signed-rank test and Wilcoxon rank-sum test are used to test the significance of median and the difference in median, respectively. Statistical significance at the 1%, 5% and 10% levels are denoted as ***, ** and * respectively.

	Full Sample			**Activists Sample**			**Matching Sample**			**Difference (Activists – Matching)**			
	Mean	**Median**	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**	**N**	**Mean**	**P-Value**	**Median**	**P-Value**
Panel A: Targets' Announcement Abnormal Returns													
CAR [-2, 2] (%)	21.18***	16.27***	556	20.26***	16.32***	275	22.08***	16.14***	281	-1.82	(0.355)	0.18	(0.870)
	(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)					
Panel B: Bid Premium													
Bid Premium (%)	44.95	34.69	524	46.55	33.12	254	43.44	36.11	270	3.11	(0.395)	-2.99	(0.577)

Table 3.7: Multivariate analysis of targets' gains

Targets' gains and Bid Premium are regressed against a set of explanatory variables (activist dummy, target firm characteristics and deal characteristics). All variables are defined in Appendix 3A. In all models, industry fixed effects and year fixed effects are controlled for. For brevity, their coefficients are not reported in the table. The number of observations used in different specifications may vary because of the missing value of one or more variable. Bid Premiums are winsorized if values are beyond the range of [0, 2]. Other continuous variables are winsorized at the 2% and 98% levels. P-Values shown in parentheses are adjusted for heteroskedasticity and acquirer clustering. Statistical significance at the 1%, 5% and 10% levels are denoted as ***, ** and * respectively.

	Targets' CAR [-2, 2]				**Bid Premium**			
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
Activist	-0.0197	-0.0170	-0.0311	-0.0188	0.0343	0.0235	0.0105	0.0012
	(0.311)	(0.397)	(0.146)	(0.397)	(0.346)	(0.496)	(0.778)	(0.973)
Ln (MV)		-0.0260***		-0.0192**		-0.0243**		-0.0354***
		(0.000)		(0.012)		(0.039)		(0.004)
M/B		0.0005		-0.0025		-0.0114		-0.0082
		(0.903)		(0.594)		(0.176)		(0.329)
Leverage		-0.0759*		0.0070		0.1187		0.1573*
		(0.073)		(0.881)		(0.140)		(0.075)
CF/E		0.0117		0.0382		-0.0463		-0.0299
		(0.831)		(0.518)		(0.718)		(0.817)
RUNUP		-0.0579**		-0.0708***		-0.0999**		-0.1159**
		(0.014)		(0.005)		(0.037)		(0.013)
Sigma		1.9243**		2.9374***		4.6629***		4.6263***
		(0.036)		(0.003)		(0.006)		(0.005)
Relative Size			-0.0696***	-0.0514**			-0.0120	-0.0207
			(0.000)	(0.024)			(0.786)	(0.588)
Cash			0.0832***	0.0796***			0.0360	0.0092
			(0.001)	(0.005)			(0.393)	(0.841)
Hostile			-0.0063	0.0199			-0.0883	-0.0291
			(0.870)	(0.619)			(0.172)	(0.654)
Tender Offer			0.0371	0.0408			0.0368	0.0905*
			(0.213)	(0.187)			(0.456)	(0.056)
Competing Bid			-0.0493	-0.0218			0.3175***	0.3009***
			(0.187)	(0.550)			(0.000)	(0.000)
Diversification			0.0124	0.0233			0.0732*	0.0540
			(0.664)	(0.441)			(0.080)	(0.208)
Constant	0.0658	0.0193	0.0662	-0.1843	0.0886	-0.4073	0.1079	-0.3613
	(0.414)	(0.880)	(0.352)	(0.202)	(0.628)	(0.162)	(0.541)	(0.219)
N	556	477	469	420	524	404	505	396
R^2	0.089	0.190	0.186	0.260	0.129	0.247	0.182	0.313
Adj. R^2	0.033	0.120	0.114	0.173	0.072	0.169	0.115	0.227

Table 3.8: Multivariate analysis of payment methods

Payment methods are regressed against a set of explanatory variables. Specifications 1, 2, 3 and 4 show (Probit model) the cash payment binary variable takes a value of one if the deal is settled by 100% cash. In specifications 5, 6, 7 and 8 the dependent variable is the percentage of consideration paid in cash. All variables are defined in Appendix 3A. In all models, industry fixed effects and year fixed effects are controlled for. For brevity, their coefficients are not reported in the table. The number of observations used in different specifications may vary because of the missing value of one or more variable. All continuous variables are winsorized at the 2% and 98% levels. P-Values shown in parentheses are adjusted for heteroskedasticity and acquirer clustering. Statistical significance at the 1%, 5% and 10% levels are denoted as ***, ** and * respectively.

	Probit: Cash				**OLS: % Cash**			
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
Activist	0.1950*	0.2784**	0.2129*	0.3134**	0.0753**	0.0884**	0.0505	0.0647*
	(0.089)	(0.025)	(0.094)	(0.021)	(0.038)	(0.011)	(0.144)	(0.056)
Ln (MV)		0.0472		-0.0821*		-0.0001		-0.0159
		(0.261)		(0.070)		(0.992)		(0.168)
M/B		0.0193		0.0079		0.0029		-0.0004
		(0.179)		(0.587)		(0.460)		(0.903)
Leverage		-0.8178***		-0.5985**		-0.1451*		-0.0914
		(0.004)		(0.047)		(0.051)		(0.201)
CF/E		1.3444*		2.6230***		0.2601*		0.3391**
		(0.054)		(0.002)		(0.092)		(0.021)
RUNUP		-0.3760*		-0.2569		-0.0644		-0.0423
		(0.087)		(0.242)		(0.244)		(0.387)
Sigma		-36.8705***		-34.4194***		-9.2539***		-6.9290***
		(0.000)		(0.000)		(0.000)		(0.000)
Relative Size			-1.5079***	-1.8668***			-0.2008***	-0.1628***
			(0.000)	(0.000)			(0.000)	(0.000)
Hostile			-0.1282	-0.2517			-0.0036	-0.0284
			(0.606)	(0.374)			(0.951)	(0.648)
Tender Offer			0.8339***	0.7804***			0.2699***	0.2418***
			(0.000)	(0.000)			(0.000)	(0.000)
Competing Bid			0.3473	0.3940			0.1493***	0.1295**
			(0.152)	(0.165)			(0.005)	(0.016)
Diversification			0.5560***	0.5413***			0.1429***	0.1336***
			(0.000)	(0.000)			(0.000)	(0.001)
Constant	-4.1270***	-2.1769***	-4.0225***	-1.1940	0.0432	0.6832***	0.1114	0.6496***
	(0.000)	(0.009)	(0.000)	(0.154)	(0.762)	(0.006)	(0.502)	(0.001)
N	569	542	569	542	569	542	569	542
pseudo R^2	0.135	0.243	0.301	0.380	-	-	-	-
R^2	-	-	-	-	0.203	0.320	0.345	0.411
Adj. R^2	-	-	-	-	0.156	0.269	0.299	0.361

Table 3.9. Gains to acquirers and targets from deals by the type of activist

Gains to acquirers and targets by the type of activist are analysed. All variables are defined in Appendix 3A. Panel A compares gains involving hedge funds involvement and other activists. Panel B compares the gains from acquisitions of targets that have multiple activists against the gains from deals that have a single activist. Panel C compares the gins from deals that involves serial activist against those of casual activists. Serial activists are defined as activist investors who have performed five or more activist campaigns over three years before the current deal. CARs and BHARs are winsorized at the 2% and 98% levels. Bid Premiums are winsorized if values are beyond the range of [0, 2]. P-Values are shown in parentheses. T-test is used to test the significance of the mean, and the difference in mean. Wilcoxon signed-rank test and Wilcoxon rank-sum test are used to test the significance of median and the difference in median, respectively. Statistical significance at the 1%, 5% and 10% levels are denoted as ***, ** and * respectively.

Panel A: Hedge Fund vs. Other Activists

	Hedge Funds			Other Activists			Difference (Hedge Funds – Others)			
	Mean	**Median**	**N**	**Mean**	**Median**	**N**	**Mean**	**P-Value**	**Median**	**P-Value**
Acquirer CAR [-2, 2] (%)	0.85	0.33	174	0.68	0.00	142	0.17	(0.847)	0.33	(0.594)
	(0.135)	(0.227)		(0.332)	(0.721)					
Acquirer BHAR24 (%)	21.91***	23.42***	138	19.58***	9.03**	118	2.33	(0.768)	14.40	(0.369)
	(0.000)	(0.000)		(0.002)	(0.026)					
Target CAR [-2, 2] (%)	20.31***	14.94***	156	20.19***	17.02***	119	0.12	(0.962)	-2.08	(0.700)
	(0.000)	(0.000)		(0.000)	(0.000)					
Bid Premium (%)	41.98	30.28	146	52.72	36.78	108	-10.73*	(0.062)	-6.50*	(0.100)

Panel B: Multiple Activists vs. Single Activist

	Multiple Activists			Single Activist			Difference (Multiple – Single)			
	Mean	**Median**	**N**	**Mean**	**Median**	**N**	**Mean**	**P-Value**	**Median**	**P-Value**
Acquirer CAR [-2, 2] (%)	-0.31	-0.22	40	0.93*	0.37	276	-1.24	(0.309)	-0.58	(0.456)
	(0.781)	(0.717)		(0.053)	(0.192)					
Acquirer BHAR24 (%)	20.12	25.02	27	20.92***	16.77***	229	-0.80	(0.954)	8.25	(0.914)
	(0.141)	(0.249)		(0.000)	(0.000)					
Target CAR [-2, 2] (%)	17.10***	13.22***	34	20.70***	16.72***	241	-3.60	(0.282)	-3.50	(0.416)
	(0.000)	(0.000)		(0.000)	(0.000)					
Bid Premium (%)	43.82	33.18	35	46.99	33.06	219	-3.17	(0.658)	0.12	(0.875)

Panel C: Serial Activists vs. Casual Activists

	Serial Activists	Casual Activists	Difference (Serial – Casual)

	Mean	Median	N	Mean	Median	N	Mean	P-Value	Median	P-Value
Acquirer CAR [-2, 2] (%)	1.17**	0.47*	136	0.48	-0.03	180	0.69	(0.428)	0.50	(0.275)
	(0.048)	(0.093)		(0.455)	(0.935)					
Acquirer BHAR24 (%)	23.19***	25.02***	107	19.14***	6.71**	149	4.05	(0.593)	18.31	(0.213)
	(0.000)	(0.000)		(0.001)	(0.012)					
Target CAR [-2, 2] (%)	21.26***	16.76***	124	19.44***	15.50***	151	1.82	(0.472)	1.26	(0.290)
	(0.000)	(0.000)		(0.000)	(0.000)					
Bid Premium (%)	43.71	32.64	115	48.90	34.78	139	-5.18	(0.341)	-2.14	(0.504)

TABLES FOR CHAPTER 4

Table 4.1: Percentage of Divestitures with Activist Involvement

The sample consists of 353 US divestitures with activist involvement spanning a time period between 1994 and 2016. Panel A presents the percentage of divestitures by year. Panel B presents the percentage of divestiture by Activist type. Other activists include Private Equity Companies, Investment Managers, Individual Investors, Industrial Owners, Financial Institutions, Mutual Funds, and Shareholder Committees.

Panel A: Percentage of Divestitures by Year

Year	No: of Deals	Percent (%)	Year	No: of Deals	Percent (%)
1994	1	0.28	2006	17	4.82
1995	0	0.00	2007	24	6.80
1996	0	0.00	2008	26	7.37
1997	4	1.13	2009	30	8.50
1998	4	1.13	2010	25	7.08
1999	8	2.27	2011	17	4.82
2000	8	2.27	2012	15	4.25
2001	15	4.25	2013	23	6.52
2002	16	4.53	2014	26	7.37
2003	17	4.82	2015	29	8.22
2004	14	3.97	2016	16	4.53
2005	18	5.10	**Total**	**353**	**100.00**

Panel B: Percentage of Divestitures by Activist

Activist	Number of Divestitures
Hedge Fund Activists	255 (72.24%)
Other Activists	98 (27.76%)

Table 4.2: Average Time Difference between Activist Engagement Date and Divestiture Announcement Date

Activist Engagement date is defined as the date when the activist files its initial SC 13D with the Securities and Exchange Commission (SEC) as outlined on the SC 13D document. Divestiture Announcement Date is defined as the date on which the divestiture with activist involvement is announced and is obtained from Thomson One Banker (formerly SDC) Mergers and Acquisitions database. Panel A outlines the average time difference between activist engagement date and divestiture announcement date for the full sample (353 US divestitures initiated by activists). Panel B outlines the average time difference between activist engagement date and divestiture announcement date for those divestitures initiated by hedge fund activists (255 US divestitures). Panel C outlines the average time difference between activist engagement date and divestiture announcement date for divestitures initiated by other activists (98 US divestitures).

Panel A: Full Sample

Divestiture Type	Difference between Activist Engagement Date and Divestiture Announcement Date
Spinoff	1.05 years (Approximately 13 months)
Selloff	1.25 years (Approximately 16 months)
Panel B: Hedge Fund Activist Sample	
Spinoff	0.95 years (Approximately 11.5 months)
Selloff	1.19 years (Approximately 15 months)
Panel C: Other Activist Sample	
Spinoff	1.44 years (Approximately 16 months)
Selloff	1.38 years (Approximately 17 months)

Table 4.3: Characteristics of Target Companies

This table provides a comparison of characteristics of target companies undertaking divestitures initiated by activists (Columns 1 and 2) and comparisons between companies undertaking divestitures initiated by hedge fund activists (Columns 3 and 4) and companies undertaking divestitures initiated by other activists (Columns 5 and 6). The variables are defined in Appendix 4A. All variables are winsorized at the 1% and 99% levels. The t-test is used to test the significance of the difference in the means. The difference in the means and its significance are reported in Columns 7 and 8. Statistical significance at the 1%, 5% and 10% levels are denoted as ***, ** and * respectively.

	Mean (1)	**N (2)**	**Mean (3)**	**N (4)**	**Mean (5)**	**N (6)**	**Mean (7)**	**P-Value (8)**
	Full Sample		**Hedge Fund Activist Sample**		**Other Activist Sample**		**Difference (HFA – Other Activists)**	
MV ($mil)	3525.20	251	3101.74	183	4664.83	68	-1563.09	0.1836
MB	1.811	221	1.946	165	1.411	56	0.535	0.1807
Leverage	0.4165	224	0.4104	167	0.4342	57	-0.0238	0.5948
Cash/Assets	0.1094	223	0.1153	165	0.0925	58	0.0228	0.2903
Capex/Assets	0.0506	212	0.0464	158	0.0628	54	**-0.0164***	**0.0945**
ROA (%)	-9.09	212	-6.50	158	-16.66	54	**10.16*****	**0.0081**
Dividend Yield (%)	1.19	226	1.25	169	1.03	57	0.22	0.5311
Distress	-2.62	212	-0.10	158	-9.99	54	**9.89*****	**0.0011**
Cash Flows/Equity	-0.003	212	-0.0002	161	-0.0006	51	**0.0004****	**0.0330**

Table 4.4: Gains to Targets from Divestitures

This table reports the short-term and long-term gains to targets, post divestitures initiated by activists. Panel A compares the short-term gains to targets from divestitures initiated by hedge fund activists (Columns 3 and 4) and the short-term gains to targets from divestitures initiated by other activists (Columns 5 and 6). Short-term gains are measured using the cumulative abnormal returns (CARs) computed using the market-adjusted model. For robustness, we also compute the CARs using the market model. CAR [-1, 1] denotes the CARs over 3-days [-1, 1] surrounding the day of divestiture announcement. CAR [-2, 2] denotes the CARs over 5-days [-2, 2] surrounding the day of divestiture announcement. CAR [-5, 5] denotes the CARs over 11-days [-5, 5] surrounding the day of divestiture announcement. CARs are winsorized at the 5% and 95% levels. Panel B compares the long-term gains to targets from divestitures initiated by hedge fund activists (Columns 3 and 4) and the short-term gains to targets from divestitures initiated by other activists (Columns 5 and 6). Long-term gains are measured using the buy-and-hold abnormal returns (BHARs) computed using the market-adjusted model. BHAR12 denotes the BHARs over 12 months post the divestiture completion. BHAR24 denotes the BHARs over 24 months post the divestiture completion. BHAR36 denotes the BHARs over 36 months post the divestiture completion. The t-test is used to test the significance of the difference in the means for both short-term gains and long-term gains (Columns 7 and 8). Statistical significance at the 1%, 5% and 10% levels are denoted as ***, ** and * respectively.

	Mean (1)	**N (2)**	**Mean (3)**	**N (4)**	**Mean (5)**	**N (6)**	**Mean (7)**	**P-Value (8)**
Panel A: Hedge Fund Activist-initiated Divestitures vs. Other Activist-initiated Divestitures – Short Term								
	Full Sample		**Hedge Fund Activist Sample**		**Other Activist Sample**		**Difference (HFA – Other Activists)**	
CAR [-1, 1] (%)	2.61***	353	2.73***	255	2.28**	98	0.45	0.6578
	(0.0000)		(0.0000)		(0.0193)			
CAR [-2, +2] (%)	2.68***	352	3.09***	255	1.59*	97	1.50	0.1560
	(0.0000)		(0.0000)		(0.0985)			
CAR [-5, +5] (%)	3.30***	351	3.93***	254	1.63*	97	**2.30***	**0.0585**
	(0.0000)		(0.0000)		(0.0985)			
Panel B: Hedge Fund Activist-initiated Divestitures vs. Other Activist-initiated Divestitures – Long Term								
	Full Sample		**Hedge Fund Activist Sample**		**Other Activist Sample**		**Difference (HFA – Other Activists)**	
BHAR12 (%)	23.10***	228	32.24***	167	-1.95	61	**34.19*****	**0.000**
	(0.0000)		(0.0000)		(0.7153)			
BHAR24 (%)	23.47***	228	34.88***	167	-7.77	61	**42.65****	**0.010**
	(0.0057)		(0.0010)		(0.5297)			
BHAR36 (%)	7.08	228	14.16	167	-12.30	61	26.46	0.175
	(0.4365)		(0.1982)		(0.4384)			

Table 4.5: Long-Term Operating Performance from Divestitures

This table presents targets' long-term operating performance after divestitures initiated by activists (Columns 1 and 2) and a comparison of long-term operating performance of targets of hedge fund activists (Columns 3 and 4) and targets of other activists (Columns 5 and 6) post the completion of the activist-initiated divestiture. Long-term operating performance is measured using the Return on Assets (ROA) computed as Net Income (Compustat Item NI) divided by Total Assets (AT). ROA1 is the 1-year post divestiture return on assets. ROA2 is the 2-year post divestiture return on assets. ROA3 is the 3-year post-divestiture return on assets. The t-test is used to test the significance of the means and the difference of the means (Columns 7 and 8). Statistical significance at the 1%, 5% and 10% levels are denoted as ***, ** and * respectively.

	Mean (1)	**N (2)**	**Mean (3)**	**N (4)**	**Mean (5)**	**N (6)**	**Mean (7)**	**P-Value (8)**
	Full Sample		**Hedge Fund Activist Sample**		**Other Activist Sample**		**Difference (HFA – Other Activists)**	
ROA1 (%)	-15.68*	141	-3.60*	101	-46.19	40	**42.59****	**0.0391**
	(0.0947)		(0.0625)		(0.1606)			
ROA2 (%)	-5.61**	125	-1.99	90	-14.91**	35	**12.92****	**0.0133**
	(0.0189)		(0.3489)		(0.0224)			
ROA3 (%)	-3.75	109	1.10	78	-15.95**	31	**17.05*****	**0.0026**
	(0.1508)		(0.6318)		(0.0225)			

Table 4.6: Post-Divestiture Operating Performance of Activist Targets

Targets' post divestiture operating performance (ROA) is regressed (OLS) against a set of explanatory variables (Hedge Fund dummy and target firm characteristics). ROA1 is the 1-year post divestiture return on assets. ROA2 is the 2-year post divestiture return on assets. ROA3 is the 3-year post-divestiture return on assets. The variables are defined in Appendix 4A. The key variable of interest if the *Hedge Fund* dummy variable that takes the value of 1 if divestitures are initiated by hedge fund activists and 0 if divestitures are initiated by other activists. The number of observations used in different specifications may vary because of the missing value of one or more variables. P-Values are shown in parentheses. Statistical significance at the 1%, 5% and 10% levels are denoted as ***, ** and * respectively.

	(1)	**(2)**	**(3)**
Dependent Variable	**ROA1**	**ROA2**	**ROA3**
Hedge Fund	0.3288	**0.1412****	**0.1023****
	(0.195)	**(0.036)**	**(0.017)**
Ln (MV)	0.1423	**0.0193***	**0.0273****
	(0.126)	**(0.080)**	**(0.019)**
MB	0.00001	**-0.000007****	-0.0000006
	(0.327)	**(0.013)**	(0.781)
Leverage	-0.1317	-0.0489	**0.0050****
	(0.469)	(0.504)	**(0.027)**
Cash/Assets	0.0127	-0.1168	0.0675
	(0.973)	(0.636)	(0.716)
Capex/Assets	-5.382	-0.2684	**-0.9497****
	(0.248)	(0.620)	**(0.012)**
Dividend Yield	0.3689	**0.3283****	**0.4220***
	(0.340)	**(0.037)**	**(0.070)**
Constant	-1.880	-0.2694	**-0.3954****
	(0.126)	(0.107)	**(0.014)**
N	**129**	**118**	**101**
R^2	**0.2991**	**0.3400**	**0.4860**
Year Fixed Effects	**Yes**	**Yes**	**Yes**

Table 4.7: Long-Term Profitability Post Divestitures

This table presents targets' long-term profitability after divestitures initiated by activists (Columns 1 and 2) and a comparison of long-term profitability of targets of hedge fund activists (Columns 3 and 4) and targets of other activists (Columns 5 and 6) post the completion of the activist-initiated divestiture. Long-term Profitability is computed as Earnings before Interest and Taxes (Compustat Item EBIT) divided by Total Assets (Compustat Item AT). PROFIT1 is the 1-year post divestiture profitability. PROFIT2 is the 2-year post divestiture profitability. PROFIT3 is the 3-year post-divestiture profitability. The t-test is used to test the significance of the means and the difference of the means (Columns 7 and 8). Statistical significance at the 1%, 5% and 10% levels are denoted as ***, ** and * respectively.

	Mean (1)	**N (2)**	**Mean (3)**	**N (4)**	**Mean (5)**	**N (6)**	**Mean (7)**	**P-Value (8)**
	Full Sample		**Hedge Fund Activist Sample**		**Other Activist Sample**		**Difference (HFA – Other Activists)**	
PROFIT1 (%)	-7.97	143	1.28	103	-31.81	40	**33.09****	**0.0309**
	(0.2501)		(0.5425)		(0.1907)			
PROFIT2 (%)	-3.02	126	0.99	91	-13.44*	35	**14.43****	**0.0120**
	(0.2458)		(0.6818)		(0.0520)			
PROFIT3 (%)	-0.77	110	4.00*	80	-13.50	30	**17.50****	**0.0128**
	(0.8072)		(0.0676)		(0.1776)			

Table 4.8: Post-Divestiture Profitability of Activist Targets

Targets' post divestiture profitability (Compustat Item EBIT/Compustat Item AT) is regressed (OLS) against a set of explanatory variables (Hedge Fund dummy and target firm characteristics). PROFIT1 is the 1-year post divestiture profitability. PROFIT2 is the 2-year post divestiture profitability. PROFIT3 is the 3-year post-divestiture profitability. The variables are defined in Appendix 4A. The key variable of interest if the *Hedge Fund* dummy variable that takes the value of 1 if divestitures are initiated by hedge fund activists and 0 if divestitures are initiated by other activists. The number of observations used in different specifications may vary because of the missing value of one or more variables. P-Values are shown in parentheses. Statistical significance at the 1%, 5% and 10% levels are denoted as ***, ** and * respectively.

	(1)	**(2)**	**(3)**
Dependent Variable	**PROFIT1**	**PROFIT2**	**PROFIT3**
Hedge Fund	0.2517	**0.1554****	**0.0845***
	(0.165)	**(0.045)**	**(0.080)**
Ln (MV)	**0.1092***	0.0180	**0.0357****
	(0.099)	(0.264)	**(0.018)**
MB	0.000008	-0.000005	0.000003
	(0.319)	(0.455)	(0.350)
Leverage	-0.1949	-0.0122	**0.0094*****
	(0.394)	(0.903)	**(0.002)**
Cash/Assets	0.0069	-0.2784	0.1163
	(0.984)	(0.372)	(0.745)
Capex/Assets	-3.777	-1.015	**-0.08351*****
	(0.227)	(0.255)	**(0.008)**
Dividend Yield	0.4227	**0.3737****	0.1692
	(0.275)	**(0.034)**	(0.677)
Constant	-1.346	-0.2211	**-0.4431****
	(0.101)	(0.363)	**(0.041)**
N	**132**	**119**	**102**
R^2	**0.3253**	**0.3056**	**0.3264**
Year Fixed Effects	**Yes**	**Yes**	**Yes**

Table 4.9: Probability of Takeovers Post Hedge Fund Activist-Initiated Divestitures

A Probit model is used to analyse whether hedge fund activists increase the probability of takeovers following the divestiture, compared to other activists. Dependent variable is The *Acquired* binary variable takes the value of 1 if targets are acquired following the completion of activist-initiated divestiture and is 0 if they remain independent. The key variables of interest are the *Hedge Fund* dummy variable that takes the value of 1 for divestitures initiated by hedge fund activists and 0 for divestitures initiated by other activists and the *Hedge Fund x Spinoff* interaction variable. All variables are defined in Appendix 4A. P-Values are shown in parentheses. Statistical significance at the 1%, 5% and 10% levels are denoted as ***, ** and * respectively.

	Coefficient (1)	**Marginal Effects at Variable Means (2)**
Dependent Variable	**Acquired**	
Hedge Fund	0.2461	0.0540
	(0.456)	(0.474)
Spinoff	-0.6899	**-0.1940*****
	(0.310)	**(0.005)**
Hedge Fund X Spinoff	-0.2533	
	(0.760)	
Ln Target (MV)	**0.1903****	**0.0498****
	(0.045)	**(0.032)**
Target M/B	-0.00004	-0.00001
	(0.246)	(0.245)
Target Leverage	**-1.084***	**-0.2834****
	(0.053)	**(0.041)**
Target Cash/Assets	-0.6497	-0.1699
	(0.548)	(0.548)
Target Capex/Assets	1.319	0.3450
	(0.496)	(0.488)
Target Dividend Yield	**-17.304****	**-4.526****
	(0.038)	**(0.038)**
Target Distress	**-1.696***	**-0.4435***
	(0.084)	**(0.080)**
Target ROA	**1.351***	**0.3532***
	(0.088)	**(0.090)**
Constant	**-2.609****	
	(0.028)	
N	**122**	**122**
Pseudo R^2	**0.1529**	

Table 4.10: Hedge Fund Activists' Choice between Spinoffs and Selloffs

Choice of Divestiture is regressed against a set of explanatory variables. A probit model is used to analyse whether hedge fund activists increase the probability of spinoffs compared to other activists. Dependent variable is the *Spinoff* dummy variable takes the value of 1 for spinoffs involving activists and 0 for selloffs involving activists. The key variable of interest is the *Hedge Fund* dummy variable that takes the value of 1 for divestitures initiated by hedge fund activists and 0 for divestitures initiated by other activists. All variables are defined in Appendix 4A. p-Values are shown in parentheses. Statistical significance at the 1%, 5% and 10% levels are denoted as ***, ** and * respectively.

	Coefficient	**Marginal Effects at Variable Means**
Dependent Variable	**Spinoff**	
Hedge Fund	**0.6081***	**0.1452***
	(0.068)	**(0.063)**
Ln (MV)	**0.2014*****	**0.0469*****
	(0.005)	**(0.002)**
M/B	-0.00002	-0.000004
	(0.669)	(0.668)
Leverage	**-1.142****	**-0.2657****
	(0.039)	**(0.033)**
Cash/Assets	**-1.930***	**-0.4493***
	(0.055)	**(0.053)**
Capex/Assets	**-3.857***	**-0.8978***
	(0.067)	**(0.066)**
Dividend Yield	2.428	0.5650
	(0.581)	(0.578)
ROA	**3.385****	**0.7878****
	(0.021)	**(0.018)**
Constant	**-3.160*****	
	(0.002)	
N	**196**	**196**
Pseudo R^2	**0.2354**	

Table 4.11: Multivariate Analysis of Targets' Announcement Gains from Spinoffs

Cumulative abnormal returns around the day of spinoff announcement are regressed (OLS) against a set of explanatory variables (Hedge Fund dummy and target firm characteristics). CAR3 measures the 3-day abnormal returns around the day of spinoff announcement. CAR5 measures the 5-day abnormal returns around the day of spinoff announcement. CAR11 measures the 11-day abnormal returns around the day of spinoff announcement. All variables are defined in Appendix 4A. CARs and all other continuous variables are winsorized at the 1% and 99% levels. P-Values are shown in parentheses. Statistical significance at the 1%, 5% and 10% levels are denoted as ***, ** and * respectively.

	(1)	(2)	(3)
Dependent Variable	**CAR3**	**CAR5**	**CAR11**
Hedge Fund	0.0604	**0.0878****	**0.1040****
	(0.175)	**(0.025)**	**(0.031)**
Ln (MV)	**-0.0294****	**-0.0260***	**-0.0243***
	(0.039)	**(0.065)**	**(0.083)**
Leverage	-0.0125	-0.0222	0.0116
	(0.942)	(0.912)	(0.947)
Cash Flows/Equity	**0.0275****	**0.0323****	0.0206
	(0.033)	**(0.030)**	(0.191)
Cash/Assets	-0.1862	-0.1651	-0.1823
	(0.582)	(0.654)	(0.616)
Capex/Assets	0.1994	0.24229	0.2849
	(0.418)	(0.286)	(0.172)
Dividend Yield	2.009	**2.476***	1.748
	(0.102)	**(0.061)**	(0.259)
Distress	-0.0008	-0.0006	0.0006
	(0.605)	(0.627)	(0.646)
ROA	-0.2942	-0.5623	-0.5639
	(0.412)	(0.193)	(0.241)
Constant	0.2558	0.1639	0.1458
	(0.181)	(0.389)	(0.490)
N	**37**	**37**	**37**
R^2	**0.7933**	**0.8144**	**0.8195**

Table 4.12: Gains to Bondholders from Activist-initiated Divestitures

This table reports the short-term and long-term gains to targets' bondholders after divestitures initiated by activists (Columns 1 and 2). A comparison of the short-term gains and long-term gains to the bondholders of targets undertaking divestitures initiated by hedge fund activists (Columns 3 and 4) and to the bondholders of targets undertaking divestitures initiated by other activists (Columns 5 and 6) are also reported. Short-term and long-term gains are computed using the methodology of Klein and Zur (2011). The t-test is used to test the significance of the means and the difference of the means (Columns 7 and 8). Statistical significance at the 1%, 5% and 10% levels are denoted as ***, ** and * respectively. The reduction in the sample size occurs because, unlike the equity markets, bond trading is relatively thin— with many bonds not trading for days (Klein and Zur (2011).

	Mean	**N**	**Mean**	**N**	**Mean**	**N**	**Mean**	**P-Value**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
	Full Sample		**Hedge Fund Activist Sample**		**Other Activist Sample**		**Difference (HFA – Other Activists)**	
Short-term Bond Returns (%)	-0.95	37	-0.44	29	-2.81	8	2.37	0.6567
	(0.6619)		(0.7488)		(0.7671)			
Long-Term Bond Returns (%)	**14.66*****	37	**13.15*****	29	20.14	8	-6.99	0.5926
	(0.0086)		**(0.0086)**		(0.3126)			

Tables for Chapter 5

Table 5.1: Distribution of Hedge Fund Activist Engagements Involving Derivatives by Year

This table consists of the hedge fund activist engagements where the activist hedge funds employed derivatives while undertaking activist engagements. Panel A presents the percentage of engagements by year.

Panel A: Distribution of Engagements by Year					
Year	**No. of Engagements**	**Percent (%)**	**Year**	**No. of Engagements**	**Percent (%)**
1994	1	0.36	2005	19	6.91
1995	1	0.36	2006	20	7.27
1996	4	1.45	2007	29	10.55
1997	20	7.27	2008	14	5.09
1998	7	2.55	2009	6	2.18
1999	7	2.55	2010	12	4.36
2000	7	2.55	2011	24	8.73
2001	6	2.18	2012	13	4.73
2002	12	4.36	2013	27	9.82
2003	11	4.00	2014	29	10.55
2004	11	4.00			
			Total	**280**	**100.00**

Table 5.2: Summary Statistics of Targets of Hedge Fund Activists Using Derivatives

This table presents summary statistics for the full sample of hedge fund activist engagements, portioned by the engagements where hedge fund activists used derivatives and matching engagements. All variables are defined in Appendix 5A. Continuous variables are winsorized at the 2% and 98% levels. P-Values are shown in parentheses. T-test is used to test the difference in means. Statistical significance at the 1%, 5% and 10% levels are denoted as ***, ** and * respectively.

Firm Characteristics								
	Combined Sample		Derivative Sample		Matching Sample		Difference (Derivative – Matching)	
	Mean	N	Mean	N	Mean	N	Mean	P-Value
MV ($mil)	2187.6	416	2954.98	175	1630.33	241	1324.65***	0.0000
Ln (MV)	13.43	410	13.59	174	13.31	236	0.28	0.1150
M/B	2.186	416	2.197	175	2.177	241	0.020	0.9310
Leverage	0.3624	411	0.3785	173	0.3508	238	0.0277	0.3260
Cash Flows/Equity	0.00003	407	0.00004	173	0.00002	234	0.00002	0.3940
Cash	225.95	413	293.96	174	176.49	239	117.47***	0.0054
Cash/Assets	0.1092	413	0.1021	174	0.1144	239	-0.0123	0.2916
P/E	18.07	401	22.16	170	15.07	231	7.09	0.1211

Table 5.3: Gains to Targets of Hedge Fund Activists Using Derivatives

This table presents short-term gains of targets of hedge fund activists who use derivatives. Panel A shows univariate analysis. CAR [-5, 5] is the 11-day market model cumulative abnormal returns around the announcement. CARs are winsorized at the 1% and 99% levels. P-Values are shown in parentheses. t-test is used to test the significance of the mean. Statistical significance at the 1%, 5% and 10% levels are denoted as ***, ** and *respectively. All continuous variables are winsorized at the 2% and 98% levels. P-Values shown in parentheses are adjusted for heteroskedasticity. Statistical significance at the 1%, 5% and 10% levels are denoted as ***, ** and * respectively.

	Full Sample		**Derivative Sample**		**Matching Sample**		**Difference (Derivative – Matching)**	
	Mean	**N**	**Mean**	**N**	**Mean**	**N**	**Mean**	**P-Value**
CAR [-5, 5] (%)	3.92***	412	1.86**	172	5.40***	240	-3.54***	0.0029
	(0.0000)		(0.0331)		(0.0000)			

Table 5.4: Gains to Targets of Hedge Fund Activists Using Derivatives – Multivariate Analysis

This table shows the multivariate analysis of gains to targets of hedge fund activists using derivatives. Targets' announcement abnormal returns (CAR [-5, 5]) are regressed (OLS) against a set of explanatory variables (Activist dummy and target firm characteristics). All variables are defined in Appendix 5A. In all models, industry fixed effects are controlled for. For brevity, their coefficients are not reported in the table. The number of observations used in different specifications may vary because of the missing value of one or more variable. All continuous variables are winsorized at the 2% and 98% levels. P-Values shown in parentheses are adjusted for heteroskedasticity. Statistical significance at the 1%, 5% and 10% levels are denoted as ***, ** and * respectively.

	(1)	(2)	(3)	(4)
Dependent Variable	**CAR [-5, +5]**			
Derivative	-0.0340***	-0.0368***	-0.0342***	-0.0395***
	(0.006)	(0.003)	(0.005)	(0.002)
Ln (MV)		-0.0020		0.0037
		(0.721)		(0.540)
M/B		-0.0065**		-0.0007**
		(0.019)		(0.011)
Leverage		0.0164		0.0077
		(0.442)		(0.733)
CF/E			-88.64*	-93.06*
			(0.067)	(-0.056)
Cash			0.00002	0.00001
			(0.200)	(0.506)
P/E			-0.00001	0.00001
			(0.933)	(0.941)
Constant	-0.0998	-0.1641***	-0.1028	-0.1988***
	(0.235)	(0.001)	(0.162)	(0.000)
N	411	400	382	373
R^2	0.0741	0.0999	0.1086	0.1353

Table 5.5: Long-Term Gains to Targets of Hedge Fund Activists Using Derivatives

This table presents long-term gains of targets of hedge fund activists who use derivatives. BHAR6 is the 6-month market-adjusted model buy-and-hold abnormal returns around the announcement. BHAR12 is the 12-month market-adjusted model buy-and-hold abnormal returns around the announcement. BHAR24 is the 24-month market-adjusted model buy-and-hold abnormal returns around the announcement. Variables are winsorized at the 2% and 98% levels. P-Values are shown in parentheses. T-test is used to test the significance of the mean. Statistical significance at the 1%, 5% and 10% levels are denoted as ***, ** and * respectively.

	Full Sample		**Derivative Sample**		**Matching Sample**		**Difference (Derivative – Matching)**	
	Mean	**N**	**Mean**	**N**	**Mean**	**N**	**Mean**	**P-Value**
BHAR6 (%)	1.45	324	-0.82	150	3.41	174	-4.23	0.2119
	(0.3911)		(0.7292)		(0.1546)			
BHAR12 (%)	-0.77	303	-2.49	138	0.66	165	-3.15	0.5495
	(0.7672)		(0.4783)		(0.8629)			
BHAR24 (%)	2.95	219	1.44	96	4.14	123	-2.70	0.7500
	(0.4817)		(0.8263)		(0.4509)			

Table 5.6: Idiosyncratic Volatility of Targets of Hedge Fund Activists Using Derivatives

To examine whether targets of hedge fund activists have improved when hedge fund activists used derivatives, the idiosyncratic volatility of targets is computed before and after the hedge fund activist discloses its stake. The methodology of Bali and Cakici (2008) is followed for computing idiosyncratic volatility. Panel A shows idiosyncratic volatility of targets of hedge fund activists using derivatives post announcement. Panel B shows idiosyncratic volatility of targets of hedge fund activists not using derivatives post announcement.

Panel A. Idiosyncratic Volatility of Targets of Hedge Fund Activists Using Derivatives

	Full Sample		Post-Announcement		Pre-Announcement		Difference (Post – Pre)	
	Mean	N	Mean	N	Mean	N	Mean	P-Value
Volatility (%)	2.78	348	2.52	173	3.04	175	-0.52**	0.0359

Panel B. Idiosyncratic Volatility of Targets of Hedge Fund Activists Not Using Derivatives

	Full Sample		Post-Announcement		Pre-Announcement		Difference (Post – Pre)	
	Mean	N	Mean	N	Mean	N	Mean	P-Value
Volatility (%)	2.93	482	2.46	241	3.41	241	-0.95***	0.0001

Table 5.7: Distribution of Deals with Hedge Fund Activist Involvement

This table presents deals with hedge fund activist involvement during 1995-2015, which includes both targets where the activist hedge fund used derivatives and targets where hedge fund activists did not use derivatives as part of acquiring targets' stock. Panel A outlines the distribution of deals by year. Panel B outlines the distribution of deals by Target Industry.

Panel A: Distribution of Deals by Year

Year	No. of Deals	Percent (%)	Year	No. of Deals	Percent (%)
1995	1	0.56	2006	11	6.18
1996	2	1.12	2007	22	12.36
1997	8	4.49	2008	12	6.74
1998	6	3.37	2009	7	3.93
1999	8	4.49	2010	10	5.62
2000	3	1.69	2011	13	7.30
2001	2	1.12	2012	12	6.74
2002	4	2.25	2013	17	9.55
2003	2	1.12	2014	23	12.92
2004	3	1.69	2015	7	3.93
2005	5	2.81			
			Total	**178**	**100.00**

Panel B: Distribution of Deals by Industry

Industry	No. of Deals	Percent (%)	Year	No. of Deals	Percent (%)
Consumer Products & Services	12	6.74	Materials	11	6.18
Energy & Power	14	7.87	Media & Entertainment	9	5.06
Financials	13	7.30	Real Estate	8	4.49
Healthcare	20	11.24	Retail	21	11.80
High Technology	32	17.98	Consumer Staples	8	4.49
Industrials	17	9.55	Telecommunications	13	7.30
			Total	**178**	**100.00**

Panel C: Deal Characteristics of Hedge Fund Activism Mergers Using Derivatives

	Mean	N
Deal Value ($ mil.)	1944.61	178
Completed (%)	64.61	178

Table 5.8: Probability of Takeovers of Targets of Hedge Fund Activists Using Derivatives

Acquired binary variable is regressed against a set of explanatory variables using a probit model. The *Acquired* binary variable takes the value of 1 for targets of hedge fund activists using derivatives, which get acquired and 0 for targets of hedge fund activists using derivatives, which do not get acquired. All variables are defined in Appendix 5A. All continuous variables are winsorized at the 2% and 98% levels. P-Values shown in parentheses are adjusted for heteroskedasticity. Statistical significance at the 1%, 5% and 10% levels are denoted as ***, ** and * respectively.

	(1)	(2)	(3)	(4)
Dependent Variable	***Acquired***			
Derivative	-0.1537	-0.1770	-0.3407**	**-0.2952***
	(0.220)	(0.266)	(0.047)	**(0.096)**
Ln (MV)		-0.0589		-0.1384**
		(0.212)		(0.025)
M/B		-0.00002		0.00002
		(0.504)		(0.510)
Leverage		-0.5462*		-0.3671
		(0.053)		(0.252)
CF/E			1.330***	1.491***
			(0.000)	(0.000)
Cash			0.00003	0.0003
			(0.853)	(0.253)
P/E			0.0002	0.0004
			(0.887)	(0.728)
Constant	0.2469***	1.3769**	0.2439**	2.0489***
	(0.003)	(0.025)	(0.034)	(0.008)
N	416	277	262	254
Pseudo R^2	0.0027	0.0229	0.1066	0.1335

Figures for Chapter 4

Figure 4.1: Distribution of Divestitures

This figure shows the distribution of activist-initiated divestitures of the full sample. Two main divestitures were considered: spinoffs (defined as a process whereby "a certain asset of a firm is split off from the parent firm into a separately publicly traded firm" (Prezas and Simonyan, 2015, p.84)) and selloffs (defined as a process whereby "a certain asset of the divesting firm is sold off for cash or securities to another firm or entity" (Prezas and Simonyan, 2015, p.84)). The sample spans over a time period from 1994 to 2016. The final sample consisted of 353 divestitures, of which 255 divestitures were initiated by hedge fund activists and the remaining 98 divestitures were initiated by other activists.

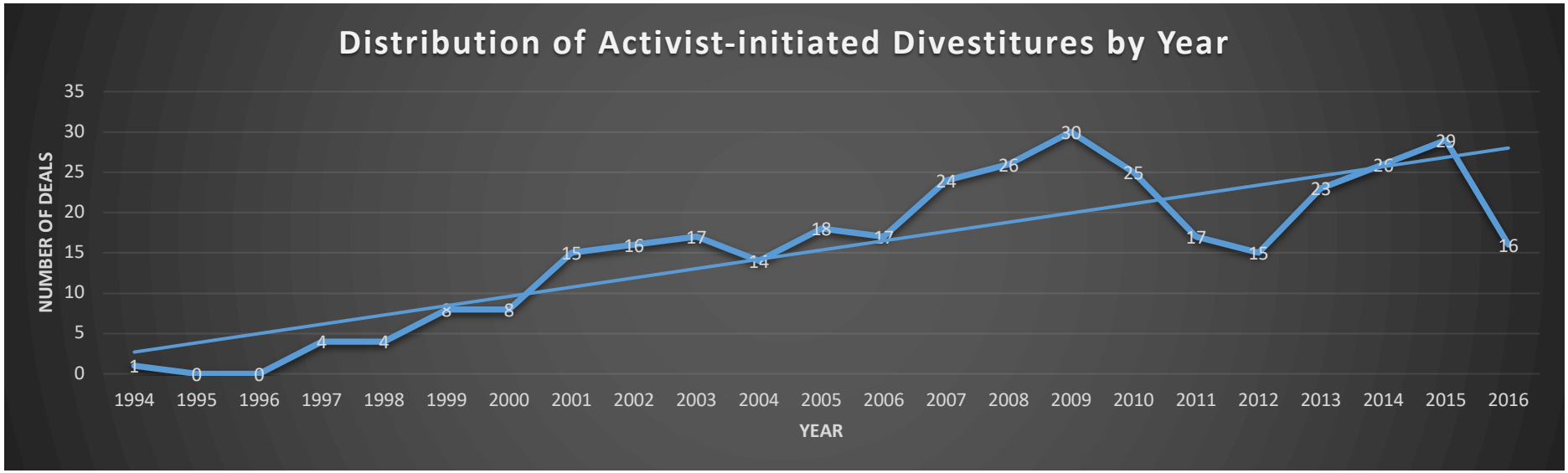


Figure 4.2: Post-Divestiture Operating Performance of Activist Targets

This figure presents a comparison of targets' operating performance prior to and post the divestitures initiated by hedge fund activists (HFA) and other activists. Operating Performance is measured using Return on Assets computed as Net Income (Compustat Item NI) divided by Total Assets (Compustat Item AT). Year (n-1) denotes 1 year prior to the year of the activist-initiated divestiture. Year (n+1) denotes 1 year after the completion of the activist-initiated divestiture. Year (n+2) denotes 2 years post the completion of the activist-initiated divestiture. Year (n+3) denotes 3 years post the completion of the activist-initiated divestiture. Series1 denotes the ROA values for both targets of hedge fund activists and for targets of other activists.

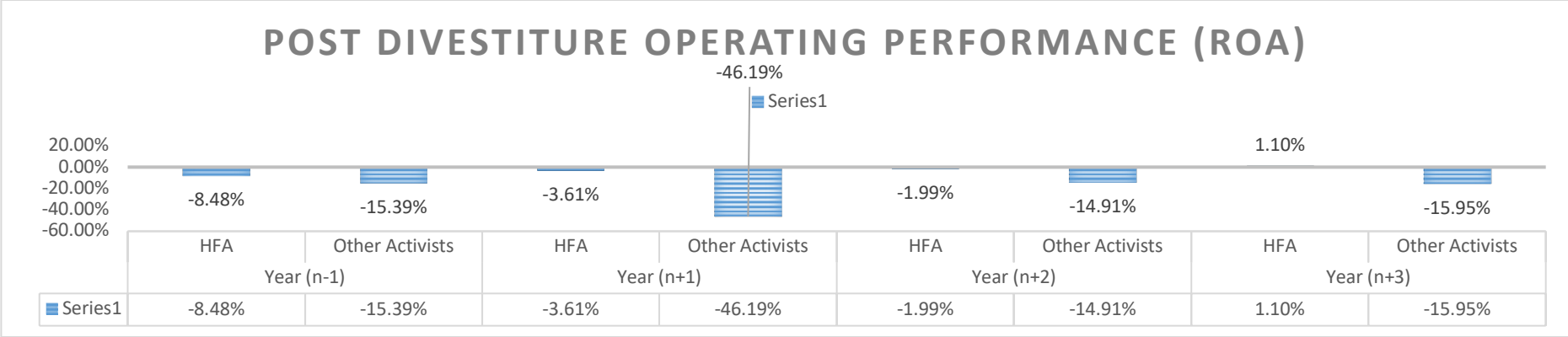
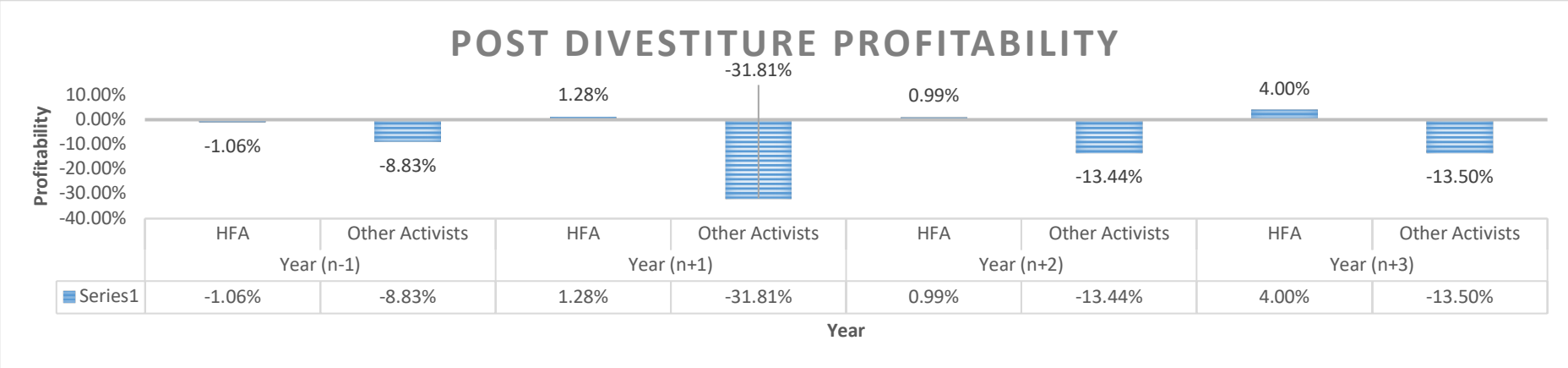


Figure 4.3: Post-Divestiture Target Profitability of Activist Targets

This figure presents a comparison of targets' profitability prior to and post the divestitures initiated by hedge fund activists (HFA) and other activists. Profitability is computed as Earnings Before Interest and Taxes (Compustat Item EBIT) divided by Total Assets (Compustat Item AT). Year (n-1) denotes 1 year prior to the year of the activist-initiated divestiture. Year (n+1) denotes 1 year after the completion of the activist-initiated divestiture. Year (n+2) denotes 2 years post the completion of the activist-initiated divestiture. Year (n+3) denotes 3 years post the completion of the activist-initiated divestiture. Series1 denotes the ROA values for both targets of hedge fund activists and for targets of other activists.



APPENDIX

Appendix 3A: Definition of Variables -Hedge Fund Activism & Corporate Takeovers

Variable	Definition
Panel A: Gains to Acquirers and Targets	
CAR [-2, 2]	Market-adjusted cumulative abnormal returns around the announcement over 5-days [-2, 2] surrounding the day of deal announcement.
BHAR24	Post-merger Buy-and-hold excess returns in 24 months.
Bid Premium	Difference between the offer price and the target stock price 4 weeks before the announcement divided by the latter.
Panel B: Key Explanatory Variable	
Activist	Dummy variable equals one if takeover target is an activist target firm.
Panel C: Firm Characteristics	
MV	Market value of the firm 4 weeks before the announcement (CRSP item PRC×SHROUT).
Ln (MV)	Natural logarithm of MV.
M/B	Market value of equity 4 weeks before the announcement (CRSP item PRC×SHROUT) divided by book value of equity at the fiscal year end before the announcement (Compustat item CEQ).
Leverage	Total debt over total capital at the fiscal year end before the announcement (Compustat item (DLTT+DLC)/(DLTT+DLC+SEQ)).
CF/E	Cash flows at the fiscal year end before the announcement (Compustat item IB+DP-DVP-DVC) divided by market value of equity 4 weeks before the announcement (CRSP item PRC×SHROUT).
RUNUP	Market-adjusted CARs before the announcement of the deal, [-365, -28] days window.
Sigma	The standard deviation of a firm's market-adjusted daily abnormal return prior to the announcement [-365, -28].
Panel D: Deal Characteristics	
TV	Transaction value of the M&A deal (from Thomson One Banker).
Relative Size	Transaction value (from Thomson One Banker) divided by the acquirer's MV (defined above).
Cash	Dummy variable equals one if the deal is 100% paid in cash, and 0 otherwise.
Stock	Dummy variable equals one if the deal is 100% paid in stock, and 0 otherwise.
Mix	Dummy variable equals one if deal is paid in cash and stock, and 0 otherwise.
Non-cash	Dummy variable equals one if deal is not 100% cash (includes stocks and other securities), and 0 otherwise.
% Cash	The percentage of consideration paid in cash (from Thomson One Banker).
Hostile	Dummy variable equals one if the deal attitude is hostile or unsolicited in Thomson One Banker.
Competing Bid	Dummy variable equals one if there is more than one bidder reported in Thomson One Banker.
Tender Offer	Dummy variable equals one if the deal is identified as a tender offer in Thomson One Banker.
Diversification	Dummy variable equals one if the bidder and the target have different first two-digits of the primary SIC code.

Appendix 4A: Definition of Variables – Hedge Fund Activism & Corporate Divestitures

Variable	Definition
Panel A: Gains to Targets	
CAR [-1, 1]	Cumulative abnormal returns around the announcement over 3-days [-1, 1] surrounding the day of divestiture announcement, computed using market-adjusted model.
CAR [-2, 2]	Cumulative abnormal returns around the announcement over 5-days [-2, 2] surrounding the date of divestiture announcement, computed using the market-adjusted model.
CAR [-5, 5]	Cumulative abnormal returns around the announcement over 11-days [-5, 5] surrounding the day of divestiture announcement, computed using market-adjusted model.
BHAR12	Buy-and-Hold abnormal returns over 12 months post the divestiture completion, computed using market-adjusted model.
BHAR24	Buy-and-Hold abnormal returns over 24 months post the divestiture completion, computed using market-adjusted model.
BHAR36	Buy-and-Hold abnormal returns over 36 months post the divestiture completion, computed using market-adjusted model.
Panel B: Key Explanatory Variable	
Spinoff	Dummy variable equals one for spinoffs involving activists and 0 for selloffs involving activists.
Hedge Fund	Dummy variable equals one for divestitures initiated by hedge fund activists and 0 for divestitures initiated by other activists.
Panel C: Firm Characteristics	
MV	Market value of the firm (CRSP item PRC×SHROUT)
Ln (MV)	Natural logarithm of MV.
M/B	Market value of equity (CRSP item PRC×SHROUT) divided by book value of equity (Compustat item CEQ)
Leverage	Total debt over total capital (Compustat item (DLTT+DLC)/(DLTT+DLC+SEQ))
CF/E	Cash flows (Compustat item IB+DP-DVP-DVC) divided by market value of equity (CRSP item PRC×SHROUT)
Cash/Assets	Cash of the target firms (Compustat Item CH) divided by total assets (Compustat item AT)
Capex/Assets	Capital Expenditures (Compustat Item CAPX) divided by total assets (Compustat item AT)
Distress	Earnings before interest and taxes (Compustat Item EBIT) divided by Interest Expense (Compustat Item XINT))
Dividend Yield	Dividend Per Share by Ex-Date (Compustat Item DVPSX_F) divided by Closing Stock Price for Fiscal Year (Compustat Item PRCC_F)
Profitability	Earnings before interest and taxes (Compustat Item EBIT) divided by Total Assets (Compustat Item AT)
ROA	Net Income (Compustat Item NI) divided by Total Assets (Compustat Item AT)

Appendix 5A: Definition of Variables – Hedge Fund Activism & Derivatives

Variable	Definition
Panel A: Gains to Targets	
CAR [-5, 5]	Cumulative abnormal returns around the announcement over 11-days [-5, 5] surrounding the day of activist engagement announcement, computed using market model.
Volatility	Idiosyncratic volatility of targets of both hedge fund activists who use derivatives and who do not use derivatives before and after the activist engagement announcement.
Panel B: Key Explanatory Variables	
Derivative	Dummy variable equals one for targets of hedge fund activists who employ derivatives
Acquired	Dummy variable equals one for targets of hedge fund activists, who employ derivatives, that get acquired
Panel C: Firm Characteristics	
MV	Market value of the firm 4 weeks before the announcement (CRSP item PRC×SHROUT)
Ln (MV)	Natural logarithm of MV.
M/B	Market value of equity 4 weeks before the announcement (CRSP item PRC×SHROUT) divided by book value of equity at the fiscal year end before the announcement (Compustat item CEQ)
Leverage	Total debt over total capital at the fiscal year end before the announcement (Compustat item (DLTT+DLC)/(DLTT+DLC+SEQ))
CF/E	Cash flows at the fiscal year end before the announcement (Compustat item IB+DP-DVP-DVC) divided by market value of equity 4 weeks before the announcement (CRSP item PRC×SHROUT)
Cash	Cash of the target firms (Compustat Item CH)
Cash/Assets	Cash of the target firms (Compustat Item CH) divided by total assets (Compustat item AT)
P/E	Stock Price (CRSP Item PRC) divided by earnings per share (Compustat Item NI/Compustat Item CSHO)

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